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GEOGRAPHICAL MEMOIR
UPON
UPPER CALIFORNIA.

BY JOHN CHARLES FREMONT.

ADDRESSED TO THE SENATE OF THE UNITED STATES IN 1848.

TO WHICH ARE NOW ADDED, EXTRACTS FROM

HAKLUYT'S COLLECTION OF VOYAGES, LA PEYROUSE'S VOYAGE,
VENEGA'S HISTORY OF CALIFORNIA,
HARRIS'S COLLECTION OF VOYAGES, VON LANGDORFF'S TRAVELS,
ALCEDO'S GEOGRAPHICAL AND HISTORICAL DICTIONARY,
HASTINGS'S GUIDE TO OREGON AND CALIFORNIA,
FARNHAM'S LIFE AND ADVENTURES IN CALIFORNIA,
THE PRESIDENT'S MESSAGE TO CONGRESS, DECEMBER 5, 1848,
COL. MASON'S REPORT TO THE SECRETARY AT WAR,
LETTER OF THE REV. WALTER COLTON, AUGUST 29, 1848,
CERTIFICATE OF THE MINT,
LETTER OF THOMAS O. LARKIN, LATE CONSUL AT MONTEREY,
LETTER FROM COM. JONES TO THE SECRETARY OF THE NAVY, OCT. 25, 1848.
EDITOR OF THE OREGON SPECTATOR—HIS ACCOUNT OF OREGON.

BY WILLIAM McCARTY.

PHILADELPHIA:
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PREFACE.

IN putting to press a new edition of Colonel Frémont's Geographical Memoir upon California, I have added much information, of a reliable character, from other sources. In this compilation I have entirely avoided any selection from the numerous anonymous letters published in the newspapers. Their accounts were too conflicting to be relied on; some making the country a perfect *Paradise*, and some a *Pandemonium*; and, probably, many of the emigrants will find the country uncomfortable enough, if they go there for no other purpose than to gather gold. It has appeared to me possible to obtain all the advantages of the precious metals, with the comforts and conveniences of home, by forming a number of associations based on a proper division of labour, to contain among its numbers one or more persons of every useful mechanical art, and also enough farmers, not neglecting the religious teacher, the physician, and the schoolmaster. Let them all take their families; let the associations be bound together by contract for five or more years, whether the members are sick or well—living or dead. Let them take up land; let the mechanic build houses and barns; let part of them *fish*; part raise cattle, sheep, and hogs; part farm; and the remainder only dig gold—having a common treasury and a common purse! The gold-diggers would then always have a home in winter and in sickness, and all could then enjoy a fair share of the profits, and society, and domestic comforts at the same time. From this hasty sketch, the details of a good working plan may be made out. I might have extended the size of this pamphlet by further extracts from other writers, but I am limited in my room, and think enough already given to satisfy all such as desire a fair and faithful description of the country. Mere personal adventure has been excluded. To those who desire that, I would recommend the full accounts of their adventures, as given by Farnham and Hastings.

The following letter from the Rev. Walter Colton, chief alcalde of Monterey, California, and who has recently arrived in Philadelphia, may be relied on, as giving a true state of affairs in that country at this time:—

To the Editors of the North American and United States Gazette :—

GENTLEMEN,—The letters received by the Clyde, purporting to be written from California, and which represent that country in a state of the utmost anarchy and confusion, were evidently penned for some sinister or mischievous purpose. These letters state that General Smith had been forced by a mob to take refuge on board a man-of-war. The General, when I left Monterey, was living on board the flag ship Ohio; but he was there not to escape popular violence, but simply and solely because he could not, at the time, procure suitable quarters on shore. These letters also state that the life of Col. Mason was in jeopardy, on account of some obnoxious measures which he had adopted, when the truth is, Col. Mason is now in New York. It must be a long arm that can stretch from California to our Atlantic board.

There are two classes of persons at San Francisco; the one is the permanent citizens, the other is the gold-diggers. The citizens have every thing at issue, in repressing tumult and disorder; and the gold-diggers are on their way to the mines, and are in as much haste as a bridegroom bound to the nuptial altar, or a doctor to his first cholera patient. They have no time and no motive for getting up a mob; it cannot supply them with mules or shorten the distance to the mines; and they have no prejudices to gratify, unless a man can hate what he has never seen, and find it in his nature to salute a stranger by knocking him down, and that too with golden visions dancing through his dreams.

And there is just as little danger of lawless violence in the mines as on the sea-board. In the mines they have a primitive but very effective method of administering criminal justice. If a man attempts the life of another, or robs him of his gold, he is brought before twelve diggers, who act as judge and jury in the case; if the evidence of his guilt be clear and conclusive, he is sentenced to death, and is hung to a limb of the tree under which the court holds its sittings. There is no escape through a loophole of the law, or a technical error in the indictment. The only question is, whether he *did* what he was accused of having done; if he did not, he is discharged; if he did, he swings. Such is law and its execution in the mines. They hang for an attempt at murder, as well as murder itself. They say the wretch is just as guilty as if he had succeeded, and the next time he *may* succeed, and so they put him out of the way. A pretty good system this among gold-diggers, and life would be quite as secure if we had a touch of it here in Philadelphia.

Nor is there any serious cause of alarm on account of the Indians. Their chiefs are all but absolute, and are on friendly relations with the Americans. Here and there, a horse may be stolen; but I did not hear of a single case of murder during the time that I was in the mines. These Indians are of a mild, peaceable disposition, easily domesticated, and trained to habits of industry. They are extensively engaged in digging out gold in the mines, which they sell to the whites for provisions, blankets, and trinkets. Nor is any collision between the Americans and foreigners to be apprehended. The gold got out by the latter is mostly spent in the territory. First or last, it falls principally into the hands of the Americans. Very little of it is taken by the digger out of the country. Any attempt on the part of the foreigners to disturb the flag, would be followed by their precipitate ejection from the mines, if not their destruction.

I have written the above at the request of several gentlemen, to quiet the groundless alarms created by the letters of the Clyde.

Very respectfully, yours,

WALTER COLTON.

Philadelphia, July 3, 1849.

GEOGRAPHICAL MEMOIR.

On the second day of February, in the year 1847, during my absence on my third expedition of topographical survey in the western part of this continent, a resolve was passed by the Senate directing the construction of two maps—one of the central section of the Rocky Mountains, and the other of Oregon and Upper California—from the materials collected by me in the two previous expeditions, and with the additions which the then existing expedition might furnish; and Mr. Charles Preuss, my assistant in the first and second expeditions, was employed to commence the work.

On my return to the United States, in the month of September last, I found Mr. Preuss closely engaged upon the work on which the Senate had employed him; and, from that time to the present, I have myself given all the time that could be spared from other engagements to supply the additions which the last expedition has enabled me to make. Conceiving that the map of Oregon and California was of the most immediate and pressing importance, I first directed my attention to its preparation, in order to bring it into a condition as soon as possible to be laid before the Senate; which is now done.

In laying this map of Oregon and Upper California before the Senate, I deem it proper to show the extent and general character of the work, and how far it may be depended on as correct, as being founded on my own or other surveys, and how far it is conjectural, and only presented as the best that is known.

In extent, it embraces the whole western side of this continent between the eastern base of the Rocky Mountains and the Pacific Ocean, and between the Straits of Fuca and the Gulf of California, taking for its outline, on the north, the boundary line with Great Britain, and on the south, including the Bay of San Diego, the head of the Gulf of California, the rivers Colorado and Gila, and all the country through which the line of the late treaty with Mexico would run, from El Paso del Norte to the sea. To complete the view in that quarter, the valley of the Rio del Norte is added, from the head of the river to El Paso del Norte, thereby including New Mexico. The map has been constructed expressly to exhibit the two countries of Oregon and the Alta California together. It is believed to be the most correct that has appeared of either of them; and it is certainly the only one that shows the structure and configuration of the interior of Upper California.

The part of the map which exhibits Oregon is chiefly copied from the works of others, but

not entirely; my own explorations in that territory having extended to nearly two thousand miles. The part which exhibits California, and especially the Great Basin, the Sierra Nevada, the beautiful valley of Sacramento and San Joaquin, is chiefly from my own surveys or personal view, and in such cases is given as correct. Where my own observations did not extend, the best authorities have been followed.

The profile view in the margin, on the north side of the map, exhibits the elevations of the country from the South Pass in the Rocky Mountains to the Bay of San Francisco, passing the Utah and the Great Salt Lake, following the river Humboldt through the northern side of the Great Basin, crossing the Sierra Nevada into the valley of the Sacramento, where the emigrant road now crosses that sierra forty miles north of Nueva Helvetia. This line shows the present travelling route to California. The profile on the south side of the map exhibits the elevations of the country on a different line—the line of exploration in the last expedition—from the head of the Arkansas by the Utah and Salt Lake, and through the interior of the Great Basin, crossing the Sierra Nevada into the Sacramento valley at the head of the Rio de los Americanos. These profile views are given merely for their *outlines*, to show the structure of the country between the Rocky Mountains and the sea, and the rise and fall occasioned by mountains and valleys. Full and descriptive profile views on a large scale are wanted, marking the geological structure of the country, and exhibiting at their proper altitudes the different products of the vegetable kingdom. Some material is already collected for such a purpose, extending on different lines from the Mississippi to the Pacific, but not sufficient to complete the work.

The Arabic figures on different parts of the map indicate the elevation of places above the level of the sea; a knowledge of which is essential to a just conception of the climate and agricultural capacities of a country.

The longitudes established on the line of exploration of the last expedition are based on a series of astronomical observations, resting on four main positions, determined by lunar culminations. The first of these main positions is at the mouth of the Fontaine qui Bouit river, on the Upper Arkansas; the second is on the eastern shore of the Great Salt Lake, and two in the valley of the Sacramento, at the western base of the Sierra Nevada. This line of astronomical observations, thus carried

across the continent, reaches the Pacific Ocean on the northern shore of the Bay of Monterey.

In my published map, of the year 1845, the line of the western coast was laid down according to Vancouver. When the newly established positions were placed on the map now laid before the Senate, it was found that they carried the line of the coast about fourteen miles west, and the valleys of the Sacramento and San Joaquin about twenty miles east; making an increase of more than thirty miles in the breadth of the country below the Sierra Nevada. Upon examination, it was found that these positions agreed, nearly, with the observations of Captain Beechey, at Monterey. The corrections required by the new positions were then accordingly made; the basin of the Sacramento and San Joaquin valleys was removed to the eastward, and the line of the coast projected farther west, conformably to my observations, retaining the configuration given to it by the surveys of Vancouver.

The error in the position of the San Joaquin, Sacramento, and Wahlahmath valleys still exists upon the most authentic maps extant; and it appears that, upon the charts in general use, a greatly erroneous position is still given to the coast.

By the return of the United States sloop-of-war Portsmouth, Commander Montgomery, from the Pacific Ocean, it is learned that two British ships of war are now engaged in making a new survey of the gulf and coast of California. It is also known that an American whale ship was recently lost on the coast of California in consequence of the errors in the charts now in general use, locating the coast and islands, from Monterey south, too far east.*

The astronomical observations made by me across the continent, in this my third expedition, were calculated by Professor Hubbard, of the National Observatory, (Washington City,) during the present winter; and a note from him on the subject of these observations is added as an appendix to this memoir.† My attention having been recently called to this subject, (the true position of the Gulf of California,) I find it worthy of remark that the position given to this coast on the charts of the old Spanish navigators agrees nearly with that which would be assigned to it by the observations of the most eminent naval surveyors of the present day. The position adopted for Monterey and the adjacent coast, on the map now laid before the Senate, agrees nearly with that in which it had been placed by the observations of Malaspina,‡ in 1791.

In constructing this map, it became necessary to adopt the coast line of the Pacific, as

found in maps in general use, to give it completeness. It was no part of my design to make a chart of the coast. Finding an error when I came to lay down the Bay of Monterey, I altered my map to suit it. I knew nothing then of any errors in the coast. It is satisfactory now to find that my astronomical observations correspond with those previously made by Beechey and Belcher, and very gratifying to be able to add some testimonial to the correctness of those made by Malaspina long before either of them. Vancouver removed the coast line as fixed by Malaspina, and the subsequent observations carry it back.

In laying this map before the Senate, and in anticipation of the full work which my explorations (with some further examinations) may enable me to draw up hereafter, I deem it a proper accompaniment to the map to present some brief notices of CALIFORNIA, with a view to show the character of the country, and its capability or otherwise to sustain a considerable population. In doing this, no general remarks applicable to the whole of California can be used. The diversity in different parts is too great to admit of generalization in the description. Separate views of different parts must be taken; and in this brief sketch, the design is to limit the view to the two great divisions of the country which lie on the opposite sides of the SIERRA NEVADA, and to the character of that mountain itself, so prominent in the structure of the country, and exercising so great an influence over the climate, soil, and productions of its two divisions.

SIERRA NEVADA.

This Sierra is part of the great mountain range, which, under different names and with different elevations, but with much uniformity of direction and general proximity to the coast, extends from the peninsula of California to Russian America; and without a gap in the distance through which the water of the Rocky Mountains could reach the Pacific Ocean, except at the two places where the Columbia and Frazer's river respectively find their passage. This great range is remarkable for its length, its proximity and parallelism to the sea-coast, its great elevation, often more lofty than the Rocky Mountains, and its many grand volcanic peaks, reaching high into the region of perpetual snow. Rising singly, like pyramids, from heavily timbered plateaux, to the height of fourteen and seventeen thousand feet above the sea, these snowy peaks constitute the characterizing feature of the range, and distinguish it from the Rocky Mountains and all others on our part of the continent.

edition, as of little or no interest to the general reader. Those who are curious in mere scientific matters, are referred to the edition published by order of the Senate of the United States.

† Of this skillful, intrepid, and unfortunate navigator, Humboldt (*Essay on New Spain*) says:—

"The peculiar merit of his expedition consists not only in the number of astronomical observations, but principally in the judicious method which was employed to arrive at certain results. The longitude and latitude of four points on the coast (Cape San Lucas, Monterey, Nootka, and Fort Mulgrave) were fixed in an absolute manner."

* NAVAL.—The United States sloop-of-war Portsmouth, Commander John B. Montgomery, arrived at Boston on Friday, from the Pacific Ocean, last from Valparaiso, Feb. 23. Commander Montgomery states that the British frigate "Herald" and the brig "Pandora" were engaged in making a new survey of the gulf and coast of California.

The whale ship "Hope," of Providence, was recently lost on the coast, in consequence of an error in the charts now in general use, which locate the coast and islands from Monterey to Cape St. Lucas from fifteen to forty miles too far to the eastward.—*National Intelligencer*.

† The note and tables here referred to are omitted in this

That part of this range which traverses the ALTA CALIFORNIA is called the *Sierra Nevada*, (Snowy Mountain)—a name in itself implying a great elevation, as it is only applied, in Spanish geography, to the mountains whose summits penetrate the region of perpetual snow. It is a grand feature of California, and a dominating one, and must be well understood before the structure of the country and the character of its different divisions can be comprehended. It divides California into two parts, and exercises a decided influence on the climate, soil, and productions of each. Stretching along the coast, and at the general distance of one hundred and fifty miles from it, this great mountain wall receives the warm winds, charged with vapour, which sweep across the Pacific Ocean, precipitates their accumulated moisture in fertilizing rains and snows upon its western flank, and leaves cold and dry winds to pass on to the east. Hence the characteristic differences of the two regions—mildness, fertility, and a superb vegetable kingdom on one side, comparative barrenness and cold on the other.

The two sides of the Sierra exhibit two distinct climates. The state of vegetation, in connection with some thermometrical observations made during the recent exploring expedition to California, will establish and illustrate this difference. In the beginning of December, 1845, we crossed this Sierra, at latitude $39^{\circ} 17' 12''$, at the present usual emigrant pass, at the head of the Salmon Trout River, 40 miles north of New Helvetia, and made observations at each base, and in the same latitude, to determine the respective temperatures; the two bases being, respectively, the *western* about 500, and the *eastern* about 4000 feet above the level of the sea; and the Pass, 7200 feet. The mean results of the observations were, on the *eastern* side, at sunrise, 9° ; at noon, 44° ; at sunset, 30° ; the state of vegetation and the appearance of the country being at the same time (second week of December) that of confirmed winter; the rivers frozen over, snow on the ridges, annual plants dead, grass dry, and deciduous trees stripped of their foliage. At the *western* base, the mean temperature during a corresponding week was, at sunrise, 29° , and at sunset, 52° ; the state of the atmosphere and of vegetation that of advancing spring; grass fresh and green, four to eight inches high, vernal plants in bloom, the air soft, and all the streams free from ice. Thus December, on one side of the mountain, was winter: on the other it was spring.

THE GREAT BASIN.

EAST of the Sierra Nevada, and between it and the Rocky Mountains, is that anomalous feature in our continent, the GREAT BASIN, the existence of which was advanced as a theory after the second expedition, and is now established as a geographical fact. It is a singular feature: a basin of some five hundred miles diameter every way, between four and five thousand feet above the level of the sea, shut

in all around by mountains, with its own system of lakes and rivers, and having no connection whatever with the sea. Partly arid and sparsely inhabited, the general character of the Great Basin is that of desert, but with great exceptions, there being many parts of it very fit for the residence of a civilized people; and of these parts, the Mormons have lately established themselves in one of the largest and best. Mountain is the predominating structure of the interior of the Basin, with plains between—the mountains wooded and watered, the plains arid and sterile. The interior mountains conform to the law which governs the course of the Rocky Mountains and of the Sierra Nevada, ranging nearly north and south, and present a very uniform character of abruptness, rising suddenly from a narrow base of ten to twenty miles, and attaining an elevation of two to five thousand feet above the level of the country. They are grassy and wooded, showing snow on their summit peaks during the greater part of the year, and affording small streams of water from five to fifty feet wide, which lose themselves, some in lakes, some in the dry plains, and some in the belt of alluvial soil at the base; for these mountains have very uniformly this belt of alluvion, the wash and abrasion of their sides, rich in excellent grass, fertile, and light and loose enough to absorb small streams. Between these mountains are the arid plains which receive and deserve the name of desert. Such is the general structure of the interior of the Great Basin, more Asiatic than American in its character, and much resembling the elevated region between the Caspian Sea and northern Persia. The rim of this Basin is massive ranges of mountains, of which the Sierra Nevada on the west, and the Wah-satch and Timpanogos chains on the east, are the most conspicuous. On the north, it is separated from the waters of the Columbia by a branch of the Rocky Mountains, and from the Gulf of California, on the south, by a bed of mountainous ranges, of which the existence has been only recently determined. Snow abounds on them all; on some, in their loftier parts, the whole year; with wood and grass; with copious streams of water, sometimes amounting to considerable rivers, flowing inwards, and forming lakes or sinking in the sands. Belts or benches of good alluvion are usually found at their base.

Lakes in the Great Basin.—The Great Salt Lake and the Utah Lake are in this Basin, towards its eastern rim, and constitute its most interesting feature—one, a saturated solution of common salt—the other, fresh—the Utah about one hundred feet above the level of the Salt Lake, which is itself four thousand two hundred above the level of the sea, and connected by a strait, or river, thirty-five miles long.

These lakes drain an area of ten or twelve thousand square miles, and have, on the east, along the base of the mountain, the usual bench of alluvion, which extends to a distance of three hundred miles, with wood and water,

and abundant grass. The Mormons have established themselves on the strait between these two lakes, and will find sufficient arable land for a large settlement—important from its position as intermediate between the Mississippi valley and the Pacific Ocean, and on the line of communication to California and Oregon.

The Utah is about thirty-five miles long, and is remarkable for the numerous and bold streams which it receives, coming down from the mountains on the south-east, all fresh water, although a large formation of rock salt, imbedded in red clay, is found within the area on the south-east, which it drains. The lake and its affluents afford large trout and other fish in great numbers, which constitute the food of the Utah Indians during the fishing season. The Great Salt Lake has a very irregular outline, greatly extended at time of melting snows. It is about seventy miles in length; both lakes ranging nearly north and south, in conformity to the range of the mountains, and is remarkable for its predominance of salt. The whole lake waters seem thoroughly saturated with it, and every evaporation of the water leaves salt behind. The rocky shores of the islands are whitened by the spray, which leaves salt on every thing it touches, and a covering like ice forms over the water, which the waves throw among the rocks. The shores of the lake in the dry season, when the waters recede, and especially on the south side, are whitened with incrustations of fine white salt; the shallow arms of the lake, at the same time, under a slight covering of briny water, present beds of salt for miles, resembling softened ice, into which the horses' feet sink to the fetlock. Plants and bushes, blown by the wind upon these fields, are entirely incrustated with crystallized salt, more than an inch in thickness. Upon this lake of salt the fresh water received, though great in quantity, has no perceptible effect. No fish, or animal life of any kind, is found in it; the *larvæ* on the shore being found to belong to winged insects. A geological examination of the bed and shores of this lake is of the highest interest.

Five gallons of water taken from this lake in the month of September, and roughly evaporated over a fire, gave fourteen pints of salt, a part of which being subjected to analysis, gave the following proportions:—

Chloride of sodium (common salt).....	97.89 parts.
Chloride of calcium.....	0.61 "
Chloride of magnesium.....	0.24 "
Sulphate of soda.....	0.23 "
Sulphate of lime.....	1.12 "
	100.00

Southward from the Utah is another lake of which little more is now known than when Humboldt published his general map of Mexico. It is the reservoir of a handsome river, about two hundred miles long, rising in the Wah-satch mountains, and discharging a considerable volume of water. The river and lake were called by the Spaniards, *Saeco*, corrupted by the hunters into *Sevier*. On the map, they are called *Nicollet*, in honour of

J. N. Nicollet, whose premature death interrupted the publication of the learned work on the physical geography of the basin of the Upper Mississippi, which five years of labour in the field had prepared him to give.

On the western side of the basin, and immediately within the first range of the Sierra Nevada, is the Pyramid Lake, receiving the water of Salmon Trout River. It is thirty-five miles long, between four and five thousand feet above the sea, surrounded by mountains, is remarkably deep and clear, and abounds with uncommonly large salmon trout. Southward, along the base of the Sierra Nevada, is a range of considerable lakes, formed by many large streams from the Sierra. Lake Walker, the largest among these, affords great numbers of trout, similar to those of the Pyramid Lake, and is a place of resort for Indians in the fishing season.

There are probably other collections of water not yet known. The number of small lakes is very great, many of them more or less salty, and all, like the rivers which feed them, changing their appearance and extent under the influence of the season, rising with the melting of the snows, sinking in the dry weather, and distinctly presenting their high and low water-mark. These generally afford some fertile and well-watered land, capable of settlement.

Rivers of the Great Basin.—The most considerable river in the interior of the Great Basin is the one called on the map Humboldt River, as the mountains at its head are called Humboldt River Mountains—so called as a small mark of respect to the "*Nestor of scientific travellers*," who has done so much to illustrate North American geography, without leaving his name upon any one of its remarkable features. It is a river long known to hunters, and sometimes sketched on maps under the name of Mary's or Ogden's, but now for the first time laid down with any precision. It is a very peculiar stream, and has many characteristics of an Asiatic river—the Jordan, for example, though twice as long—rising in mountains and losing itself in a lake of its own, after a long and solitary course. It rises in two streams in mountains west of the Great Salt Lake, which unite, after some fifty miles, and bears westwardly along the northern side of the basin towards the Great Sierra Nevada, which it is destined never to reach, much less to pass. The mountains in which it rises are round and handsome in their outline, capped with snow the greater part of the year, well clothed with grass and wood, and abundant in water. The stream is a narrow line, without affluent, losing by absorption and evaporation as it goes, and terminating in a marshy lake, with low shores, fringed with bulrushes, and whitened with saline incrustations. It has a moderate current, is from two to six feet deep in the dry season, and probably not fordable anywhere below the junction of the forks during the time of melting snows, when both lake and river are considerably enlarged. The

country through which it passes (except its immediate valley) is a dry sandy plain, without grass, wood, or arable soil; from about 4700 feet (at the forks) to 4200 feet (at the lake) above the level of the sea, winding among broken ranges of mountains, and varying from a few miles to twenty in breadth. Its own immediate valley is a rich alluvion, beautifully covered with blue grass, herd grass, clover, and other nutritious grasses; and its course is marked through the plain by a line of willow and cotton-wood trees, serving for fuel. The Indians in the fall set fire to the grass and destroy all trees except in low grounds near the water.

This river possesses qualities which, in the progress of events, may give it both value and fame. It lies on the line of travel to California and Oregon, and is the best route now known through the Great Basin, and the one travelled by emigrants. Its direction, nearly east and west, is the right route for that travel. It furnishes a level unobstructed way for nearly three hundred miles, and a continuous supply of the indispensable articles of water, wood, and grass. Its head is towards the Great Salt Lake, and consequently towards the Mormon settlement, which must become a point in the line of emigration to California and the lower Columbia. Its termination is within fifty miles of the base of the Sierra Nevada, and opposite the Salmon Trout River pass—a pass only seven thousand two hundred feet above the level of the sea, and less than half that above the level of the Basin, and leading into the valley of the Sacramento, some forty miles north of Nueva Helvetia. These properties give to this river a prospective value in future communications with the Pacific Ocean, and the profile view on the north of the map shows the elevations of the present travelling route, of which it is a part, from the south pass in the Rocky Mountains to the Bay of San Francisco.

The other principal rivers of the Great Basin are found on its circumference, collecting their waters from the Snowy Mountains, which surround it, and are, 1. BEAR RIVER, on the east, rising in the massive range of the Timpanogos Mountains and falling into the Great Salt Lake, after a doubling course through a fertile and picturesque valley, two hundred miles long. 2. THE UTAH RIVER, and TIMPANOZU or TIMPANOGOS, discharging themselves into the Utah Lake on the east, after gathering their copious streams in the adjoining parts of the Wah-satch and Timpanogos Mountains. 3. NICOLLET RIVER, rising south in the long range of the Wah-satch Mountains, and falling into a lake of its own name, after making an arable and grassy valley, two hundred miles in length, through mountainous country. 4. SALMON TROUT RIVER, on the west, running down from the Sierra Nevada, and falling into Pyramid Lake, after a course of about one hundred miles. From its source, about one-third of its valley is through a pine timbered country, and for the remainder of the way through very rocky, naked ridges. It is re-

markable for the abundance and excellence of its salmon trout, and presents some ground for cultivation. 5. CARSON and WALKER RIVERS, both handsome clear-water streams, nearly one hundred miles long, coming, like the preceding, down the eastern flank of the Sierra Nevada, and forming lakes of their own name at its base. They contain salmon trout and other fish, and form some large bottoms of good land. 6. OWENS RIVER, issuing from the Sierra Nevada on the south, is a large bold stream, about one hundred and twenty miles long, gathering its waters in the Sierra Nevada, flowing to the southward, and forming a lake about fifteen miles long at the base of the mountain. At a medium stage it is generally four or five feet deep, in places fifteen; wooded with willow and cotton-wood, and makes continuous bottoms of fertile land, at intervals rendered marshy by springs and small affluents from the mountain. The water of the lake in which it terminates has an unpleasant smell and bad taste, but around its shores are found small streams of pure water, with good grass. On the map this has been called Owens River.

Besides these principal rivers issuing from the mountains on the circumference of the Great Basin, there are many others, all around, all obeying the general law of losing themselves in sands, or lakes, or belts of alluvion, and almost all of them an index to some arable land, with grass and wood.

Interior of the Great Basin.—The interior of the Great Basin, so far as explored, is found to be a succession of sharp mountain ranges and naked plains, such as have been described. These ranges are isolated, presenting summit lines broken into many peaks, of which the highest are between ten and eleven thousand feet above the sea. They are thinly wooded with some varieties of pine, (*pinus monophyllus* characteristic,) cedar, aspen, and a few other trees; and afford an excellent quality of bunch grass, equal to any found in the Rocky Mountains. Black-tailed deer and mountain sheep are frequent in these mountains; which, in consideration of their grass, water and wood, and the alluvion at their base, may be called fertile, in the radical sense of the word, as signifying a capacity to produce, or bear, and in contradistinction to sterility. In this sense these interior mountains may be called fertile. Sterility, on the contrary, is the absolute characteristic of the valleys between the mountains—no wood, no water, no grass; the gloomy artemisia the prevailing shrub—no animals, except the hares, which shelter in these shrubs, and fleet and timid antelope, always on the watch for danger, and finding no place too dry and barren which gives it a wide horizon for its view and a clear field for its flight. No birds are seen in the plains, and few on the mountains. But few Indians are found, and those in the lowest state of human existence; living not even in communities, but in the elementary state of families, and sometimes a single individual to himself—except about the lakes stocked with fish,

which become the property and resort of a small tribe. The abundance and excellence of the fish, in most of these lakes, is a characteristic; and the fishing season is to the Indians the happy season of the year.

Climate of the Great Basin.—The climate of the Great Basin does not present the rigorous winter due to its elevation and mountainous structure. Observations made during the last expedition, show that around the southern shores of the Salt Lake, latitude $40^{\circ} 30'$, to 41° , for two weeks of the month of October, 1845, from the 13th to the 27th, the mean temperature was 40° at sunrise, 70° at noon, and 54° at sunset; ranging at sunrise, from 28° to 57° ; at noon, from 62° to 76° ; at four in the afternoon, from 58° to 69° ; and at sunset, from 47° to 57° .

Until the middle of the month the weather remained fair and very pleasant. On the 15th, it began to rain in occasional showers, which whitened with snow the tops of the mountains on the south-east side of the lake valley. Flowers were in bloom during all the month. About the 18th, on one of the large islands in the south of the lake, *helianthus*, several species of *aster*, *erodium cicutarium*, and several other plants, were in fresh and full bloom; the grass of the second growth was coming up finely, and vegetation, generally, betokened the lengthened summer of the climate.

The 16th, 17th, and 18th, stormy with rain; heavy at night; peaks of the Bear River range and tops of the mountains covered with snow. On the 18th, cleared with weather like that of late spring, and continued mild and clear until the end of the month, when the fine weather was again interrupted by a day or two of rain. No snow within 2000 feet above the level of the valley.

Across the interior, between latitudes 41° and 38° , during the month of November, (5th to 25th,) the mean temperature was 29° at sunrise, and 40° at sunset; ranging at noon (by detached observations) between 41° and 60° . There was a snow-storm between the 4th and 7th, the snow falling principally at night, and sun occasionally breaking out in the day. The lower hills and valleys were covered a few inches deep with snow, which the sun carried off in a few hours after the storm was over.

The weather then continued uninterruptedly open until the close of the year, without rain or snow; and during the remainder of November, generally clear and beautiful; nights and mornings calm, a light breeze during the day, and strong winds of very rare occurrence. Snow remained only on the peaks of the mountains.

On the western side of the basin, along the base of the Sierra Nevada, during two weeks, from the 25th November to the 11th December, the mean temperature at sunrise was 11° , and at sunset 34° ; ranging at sunrise from zero to 21° , and at sunset from 23° to 44° . For ten consecutive days of the same period, the mean temperature at noon was 45° , ranging from 33° to 56° .

The weather remained open, usually very clear, and the rivers were frozen.

The winter of 1843-'44, within the basin, was remarkable for the same open, pleasant weather, rarely interrupted by rain or snow. In fact, there is nothing in the climate of this great interior region, elevated as it is, and surrounded and traversed by snowy mountains, to prevent civilized man from making it his home, and finding in its arable parts the means of a comfortable subsistence; and this the Mormons will probably soon prove in the parts about the Great Salt Lake. The progress of their settlement is already great. On the first of April, 1848, they had 3000 acres in wheat, seven saw and grist mills, seven hundred houses in a fortified enclosure of sixty acres, stock, and other accompaniments of a flourishing settlement.

Such is the Great Basin, heretofore characterized as a desert, and in some respects meriting that appellation; but already demanding the qualification of great exceptions, and deserving the full examination of a thorough exploration

MARITIME REGION WEST OF THE SIERRA NEVADA.

West of the Sierra Nevada, and between that mountain and the sea, is the second grand division of California, and the only part to which the name applies in the current language of the country. It is the occupied and inhabited part, and so different in character—so divided by the mountain wall of the Sierra from the Great Basin above—as to constitute a region to itself, with a structure and configuration, a soil, climate, and productions, of its own; and as northern Persia may be referred to as some type of the former, so may Italy be referred to as some point of comparison for the latter. North and south, this region embraces about ten degrees of latitude—from 32° , where it touches the peninsula of California, to 42° , where it bounds on Oregon. East and west, from the Sierra Nevada to the sea, it will average, in the middle parts, 150 miles; in the northern parts, 200—giving an area of about 100,000 square miles. Looking westward from the summit of the Sierra, the main feature presented is the long, low, broad valley of the Joaquin and Sacramento Rivers—the two valleys forming one—five hundred miles long and fifty broad, lying along the base of the Sierra, and bounded to the west by the low coast range of mountains, which separates it from the sea. Long dark lines of timber indicate the streams, and bright spots mark the intervening plains. Lateral ranges, parallel to the Sierra Nevada and the coast, make the structure of the country and break it into a surface of valleys and mountains—the valleys a few hundred, and the mountains two to four thousand feet above the sea. These form greater masses, and become more elevated in the north, where some peaks, as the Shastis, enter the regions of perpetual snow. Stretched along the mild coast of the Pacific,

with a general elevation in its plains and valleys of only a few hundred feet above the level of the sea—and backed by the long and lofty wall of the Sierra—mildness and geniality may be assumed as the characteristic of its climate. The inhabitant of corresponding latitudes on the Atlantic side of this continent can with difficulty conceive of the soft air and southern productions under the same latitudes in the maritime region of Upper California. The singular beauty and purity of the sky in the south of this region is characterized by Humboldt as a rare phenomenon, and all travellers realize the truth of his description.

The present condition of the country affords but slight data for forming correct opinions of the agricultural capacity and fertility of the soil. Vancouver found, at the mission of San Buenaventura, in 1792, latitude $34^{\circ} 16'$, apples, pears, plums, figs, oranges, grapes, peaches, and pomegranates growing together with the plantain, banana, cocoa-nut, sugar-cane, and indigo, all yielding fruit in abundance, and of excellent quality. Humboldt mentions the olive oil of California as equal to that of Andalusia, and the wine like that of the Canary islands. At present, but little remains of the high and various cultivation which had been attained at the missions. Under the mild and paternal administration of the "*Fathers*," the docile character of the Indians was made available for labour, and thousands were employed in the fields, the orchards, and the vineyards. At present, but little of this former cultivation is seen. The fertile valleys are overgrown with wild mustard; vineyards and olive orchards, decayed and neglected, are among the remaining vestiges; only in some places do we see the evidences of what the country is capable. At San Buenaventura we found the olive trees, in January, bending under the weight of neglected fruit; and the mission of San Luis Obispo (latitude 35°) is still distinguished for the excellence of its olives, considered finer and larger than those of the Mediterranean.

The productions of the south differ from those of the north and of the middle. Grapes, olives, Indian corn, have been its staples, with many assimilated fruits and grains. Tobacco has been recently introduced; and the uniform summer heat which follows the wet season, and is uninterrupted by rain, would make the southern country well adapted to cotton. Wheat is the first product of the north, where it always constituted the principal cultivation of the missions. This promises to be the grain-growing region of California. The moisture of the coast seems particularly suited to the potato and to the vegetables common to the United States, which grow to an extraordinary size.

Perhaps few parts of the world can produce in such perfection so great a variety of fruits and grains as the large and various region enclosing the Bay of San Francisco and drained by its waters. A view of the map will show that region and its great extent, comprehending the entire valleys of the Sacramento and

San Joaquin, and the whole western slope of the Sierra Nevada. General phrases fail to give precise ideas, and I have recourse to the notes in my journal to show its climate and productions by the test of the thermometer and the state of the vegetable kingdom.

VALLEYS OF THE SACRAMENTO AND SAN JOAQUIN.

These valleys are one, discriminated only by the names of the rivers which traverse it. It is a single valley—a single geographical formation—near 500 miles long, lying at the western base of the Sierra Nevada, and between it and the coast range of mountains, and stretching across the head of the Bay of San Francisco, with which a *delta* of twenty-five miles connects it. The two rivers, San Joaquin and Sacramento, rise at opposite ends of this long valley, receive numerous streams, many of them bold rivers, from the Sierra Nevada, become themselves navigable rivers, flow toward each other, meet halfway, and enter the Bay of San Francisco together, in the region of tide-water, making a continuous water line from one end to the other.

The valley of the San Joaquin is about 300 miles long and 60 broad, between the slopes of the coast mountain and the Sierra Nevada, with a general elevation of only a few hundred feet above the level of the sea. It presents a variety of soil, from dry and unproductive to well watered and luxuriantly fertile. The eastern (which is the fertile) side of the valley is intersected with numerous streams, forming large and very beautiful bottoms of fertile land, wooded principally with white oaks (*quercus longiglanda*, Torr. and Frem.) in open groves of handsome trees, often five or six feet in diameter, and sixty to eighty feet high. Only the larger streams, which are fifty to one hundred and fifty yards wide, and drain the upper parts of the mountains, pass entirely across the valley, forming the Tulare Lakes and the San Joaquin River, which, in the rainy season, make a continuous stream from the head of the valley to the bay. The *foot hills* of the Sierra Nevada, which limit the valley, make a woodland country, diversified with undulating grounds and pretty valleys, and watered with numerous small streams, which reach only a few miles beyond the hills, the springs which supply them not being copious enough to carry them across the plains. These afford many advantageous spots for farms, making sometimes large bottoms of rich moist land. The rolling surface of the hills presents sunny exposures, sheltered from the winds, and having a highly favourable climate and suitable soil, are considered to be well adapted to the cultivation of the grape, and will probably become the principal vine-growing region of California. The uplands bordering the valleys of the large streams are usually wooded with evergreen oaks, and the intervening plains are timbered with groves or belts of evergreen and white oaks among prairie and open land. The

surface of the valley consists of level plains along the Tulare Lakes and San Joaquin River, changing into undulating and rolling ground nearer the foot hills of the mountains.

A condensed notice from observations, made during several journeys through the valley, will serve to give some definite ideas of its climate and character.

We left the upper settlements of New Helvetia on the 14th December, and, passing through the groves of oak which border the Rio de los Americanos, directed our course in a south-easterly direction across a plain toward the Rio de los Cos-um-nes, a handsome, well wooded stream, about thirty yards wide. The Cós-um-né Indians, who give name to this river, have been driven away from it within a few years, and dispersed among other tribes; and several farms, of some leagues in extent, have already been established on the lower part of the stream. We encamped at one of these, about eight miles above the junction of the Cós-um-né River with the Mo-kel-um-ne, which, a few miles below, enters a deep slough in the tide-water of the San Joaquin delta.

At this place the temperature at sunset was 55°, and at sunrise 27°.

Our road on the 15th was over the plain between the Cos-um-ne and Mo-kel-um-ne Rivers, inclining toward the mountains. We crossed several wooded sloughs, with ponds of deep water, which, nearer the foot hills, are running streams, with large bottoms of fertile land; the greater part of our way being through open woods of evergreen and other oaks. The rainy season, which commonly begins with November, had not yet commenced, and the Mo-kel-um-ne River was at the low stage usual to the dry season, and easily forded. This stream is about sixty yards wide, and the immediate valley some thirty or forty feet below the upland plain. It has broad alluvial bottoms of very fertile soil—sometimes five hundred yards wide, bounded by a low upland, wooded with evergreen oaks. The weather in the evening was calm, the sky mottled with clouds, and the temperature at sunset 52°.

Leaving the Mo-kel-um-ne, (December 16,) we travelled about twenty miles through open woods of white oak, crossing in the way several stream beds—among them the Calaveras creek. These have abundant water, with good land above; and the Calaveras makes some remarkably handsome bottoms. Issuing from the woods, we rode about sixteen miles over an open prairie, partly covered with bunch grass, the timber reappearing on the rolling hills of the river Stanislaus in the usual belt of evergreen oaks. The river valley was about forty feet below the upland, and the stream seventy yards broad, making the usual fertile bottoms, which here were covered with green grass among large oaks. We encamped in one of these bottoms, in a grove of the large white oaks previously mentioned as *quercus longiglandula*, (Torr. and Frem.) This oak is a

new species, belonging to the division of white oaks, distinguished by the length of its acorn, which is commonly an inch and a half, and sometimes two inches. This long acorn characterizes the tree, which has accordingly been specified by Dr. Torrey as *quercus longiglandula*—(long-acorn oak.*) The tree attains frequently a diameter of six feet, and a height of eighty feet, with a wide-spreading head. The many varieties of deciduous and evergreen oaks, which predominate throughout the valleys and lower hills of the mountains, afford large quantities of acorns, which constitute the principal food of the Indians of that region. Their great abundance, in the midst of fine pasture lands, must make them an important element in the agricultural economy of the country.

The day had been very warm, and at sunset the temperature was 55°, and the weather clear and calm.

At sunrise next morning, the thermometer was at 22°, with a light wind from the Sierra, N. 75° E., and a clear pure sky, in which the blue line of the mountain showed distinctly. The way, for about three miles, was through open woods of evergreen and other oaks, with some shrubbery intermingled. Among this was a *lupinus* of extraordinary size, not yet in bloom. Emerging from the woods, we travelled in a south-easterly direction, over a prairie of rolling land, the ground becoming somewhat more broken as we approached the Towal-um-ne River, one of the finest tributaries of the San Joaquin. The hills were generally covered with a species of geranium, (*erodium cicutarium*), a valuable plant for stock, considered very nutritious. With this was frequently interspersed good and green bunch grass, and a plant commonly called *bur clover*. This plant, which in some places is very abundant, bears a spirally-twisted pod, filled with seeds, which remains on the ground during the dry season, well preserved, and affords good food for cattle until the spring rains bring out new grass. We started a band of wild horses on approaching the river, and the Indians ran off from a village on the bank—the men lurking round to observe us. About their huts were the usual *acorn cribs*, containing each some twenty or thirty bushels. We found here excellent grass, and broad bottoms of alluvial land, open-wooded, with large white oaks of the new species. The thermometer, at sunset, was at 54°.5, with a calm, clear atmosphere. Multitudes of geese and other wild fowl made the night noisy.

In the morning, the sky was clear, with an air from S. 55° E., and a hoar-frost covering the ground like a light fall of snow. At sunrise, the thermometer was at 24°.5. Our course now inclined more towards the foot of the mountain, and led over a broken country. In about seventeen miles we reached the River Aux-um-né, another large affluent to

* The names of plants mentioned in this memoir rest on the authority of Dr. Torrey, by whom the specimens have been examined.

the San Joaquin, and continued about six miles up the stream, intending to reach, gradually, the heart of the mountains at the head of the Lake Fork of the Tulare.

We encamped on the southern side of the river, where broken hills made a steep bluff, with a narrow bottom. On the northern side was a low, undulating wood and prairie land, over which a band of about three hundred elk was slowly coming to water where we halted, feeding as they approached.

December 19th.—The weather continued clear and pleasant. We continued our journey in a south-easterly direction, over a broken and hilly country, without timber, and showing only scattered clumps of trees, from which we occasionally started deer. In a few hours' ride we reached a beautiful country of undulating upland, openly timbered with oaks, principally evergreen, and watered with small streams. We came here among some villages of Indians, of the horse-thief tribes, who received us in an unfriendly manner; and, after a busy night among them, we retreated the next morning to the more open country of the lower hills. Our party was then a small one of sixteen men, encumbered with cattle, which we were driving to the relief of the main body of the expedition, which had been sent southward from Walker's Lake, in the basin, along the eastern base of the Sierra Nevada, and to which a valley in the mountain, on the Tulare Lake Fork, had been appointed as a place of meeting.

In the evening, we encamped at an elevation of 1000 feet above the sea, latitude $37^{\circ} 07' 47''$, still among the hills, on a spring hollow, leading to the Upper Joaquin River. The day had been mild, with a faint sun and cloudy weather; and, at sunset, there were some light clouds in the sky, with a north-easterly wind, and a sunset temperature of 45° ; probably rendered lower than usual by the air from the mountains, as the foot hills have generally a warmer temperature than the open valley. Elk were numerous during the day, making, on one occasion, a broken band several miles in length.

On the 21st, the thermometer at sunrise was $32^{\circ}.6$; the sky slightly clouded, and in the course of the morning, the clouds gathered heavy in the south-west. Our route lay in a south-easterly direction, toward the Upper Joaquin, crossing, among rolling hills, a large stream and several sandy beds of affluents to the main river. On the trees along these streams, as well as on the hills, I noticed *mosses*. About 2, in the afternoon, we reached the Upper San Joaquin. The stream was here about seventy yards wide, and much too deep to be forded. A little way below, we succeeded in crossing, at a rapid made by a bed of rock, below which, for several miles, the river appeared deep and not fordable. We followed down the stream for six or eight miles, and encamped on its banks, on the verge of the valley plain. At evening, rain began to fall, and, with this, the spring properly commenced. There had been a little

rain in November, but not sufficient to revive vegetation.

December 22.—The temperature at sunrise was 39° . There had been heavy rain during the night, with high wind, and this morning there was a thick fog, which began to go off at 8 o'clock, when the sun broke through. We crossed an open plain, still in a south-easterly direction, reaching, in about twenty miles, the Tulare Lake River. This is one of the largest and handsomest streams in the valley, being about one hundred yards broad, and having, perhaps, a larger body of fertile land than any other. The broad alluvial bottoms are well wooded with several species of oaks. This is the principal affluent to the Tulare Lake, (the bulrush lake,) a strip of water about seventy miles long, surrounded by lowlands, rankly overgrown with bulrushes, and receiving all the rivers in the southern end of the valley. In times of high water, the lake discharges into the Joaquin, making a continuous water-line through the whole extent of the valley.

We ascended this river to its sources in the Sierra Nevada, about fifty miles from the edge of the valley, which we reached again on the 7th of January, in the neighbourhood of the Tulare lake. We found the temperature much the same as in December. Fogs, which rose from the lake in the morning, were dense, cold, and penetrating, but, after a few hours, gave place to a fine day. The face of the country had been much improved by the rains which had fallen while we remained in the mountains. Several humble plants, among them the golden-flowered violet (*viola corymbosa*) and *erodium cicutarium*, the first valley flowers of the spring, which courted a sunny exposure and warm sandy soil, were already in bloom on the south-western hill slopes. In the foot hills of the mountains the bloom of the flowers was earlier. We travelled among multitudinous herds of elk, antelope, and wild horses. Several of the latter, which we killed for food, were found to be very fat. By the middle of January, when we had reached the lower San Joaquin, the new green grass covered the ground among the open timber on the rich river bottoms, and the spring vegetation had taken a vigorous start.

The mean temperature in the Joaquin valley, during the journey, from the middle of December to the middle of January, was, at sunrise, 29° , and at sunset, 52° , with generally a faint breeze from the Snowy Mountains in the morning, and calm weather in the evening. This was a lower temperature than we had found in the oak region of the mountains bordering the valley, between 1000 and 5000 feet above the level of the sea, where, throughout California, I have remarked the spring to be more forward than in the open valleys below.

During a journey through the valley, between the head of the Tulare Lake and the mouth of the San Joaquin, from the 19th January to the 12th February, the mean temperature was 38° at sunrise, and 53° at sunset, with frequent rains. At the end of January,

the river bottoms, in many places, were thickly covered with luxuriant grass, more than half a foot high. The California poppy, (*Eschscholtzia Californica*), the characteristic plant of the California spring; *memophila insignis*, one of the earliest flowers, growing in beautiful fields, of a delicate blue, and *erodium cicutarium*, were beginning to show a scattered bloom. Wild horses were fat, and a grisly bear, killed on the 2d February, had four inches thickness of fat on his back and belly, and was estimated to weigh a thousand pounds. Salmon was first obtained on the 4th February, in the To-wal-um-ne River, which, according to the Indians, is the most southerly stream in the valley in which this fish is found. By the middle of March, the whole valley of the San Joaquin was in the full glory of spring; the evergreen oaks were in flower, *geranium cicutarium* was generally in bloom, occupying the place of the grass, and making on all the uplands a close sward. The higher prairies between the rivers presented unbroken fields of yellow and orange coloured flowers, varieties of *Layia* and *Eschscholtzia Californica*, and large bouquets of the blue flowering *memophila* nearer the streams. These made the prevailing bloom, and the sunny hill slopes to the river bottoms showed a varied growth of luxuriant flowers. The white oaks were not yet in bloom.

Observations made in the valley, from the bend of the Joaquin to the Cós-um-né River, give, for the mean temperature, from the 10th to the 22d March, 38° at sunrise, and 56° at sunset, the dew-point being $35^{\circ}.7$ at sunrise, and $47^{\circ}.6$ at sunset, and the quantity of moisture contained in a cubic foot of air being 2.712 grains, and 4.072 grains, respectively.

A sudden change in the temperature was remarked in passing from the To-wal-um-ne to the Stanislaus River, there being no change in the weather, and the wind continuing from the north-west, to which we were more directly exposed on reaching the Stanislaus River, where we opened on the bay. In travelling down to the Stanislaus, the mean temperature for five days (from the 11th to the 16th) was $40^{\circ}.3$ at sunrise, 73° at 4, P. M., and 63° at sunset; and detached observations gave 66° at 9, A. M., 77° at noon, and 87° at 2, P. M.

The dew-point was $38^{\circ}.0$, $55^{\circ}.5$, $54^{\circ}.3$, at sunrise, at 4 in the afternoon, and at sunset; and the moisture contained in a cubic foot of air, 2.878 grains, 5.209 grains, and 4.927 grains, respectively.

North of the Stanislaus for five days (from 16th to the 21st) the mean was $36^{\circ}.6$ at sunrise, 57° at 4, P. M., and 49° at sunset. The dew-point was $34^{\circ}.9$ at sunrise, $37^{\circ}.1$ at 4, P. M., and $40^{\circ}.9$ at sunset, and the quantity of moisture in a cubic foot of air, 2.671 grains, 2.983 grains, and 3.216 grains at the corresponding times. At sunrise of the 16th, on the To-wal-um-ne, the thermometer was at 43° , and at sunrise of the next morning, on the Stanislaus, at 35° .

The temperature was lowest on the night of the 17th. At sunrise of the morning fol-

lowing, the thermometer was at 27° , and it was remarked that the frost affected several varieties of plants. On the 20th and 21st there were some showers of rain, the first since the end of February. These were preceded by south-westerly winds.

During December and the first part of January, which was still at the season of low waters, we were easily able to ford all the Joaquin tributaries. These begin to rise with the rains, and are kept up by the melting snows in the summer. At the end of January, the Joaquin requires boating throughout the valley, and the tributaries were forded with difficulty.

In the latter part of March, of a dry season, (1844,) we were obliged to boat the Stanislaus, To-wal-um-ne, and Aux-um-ne, and the San Joaquin was nowhere fordable below the bend where it is joined by the slough of the Tularé Lake. On the 13th of March, 1846, we were obliged to boat the San Joaquin, the river being nowhere fordable below the junction of the slough, and the Indians guided us to some difficult fords of the large tributaries, where we succeeded to cross with damage to our equipage. In July of the same year, we boated the San Joaquin below the Aux-um-ne, it being nowhere fordable below the bend.

In June, 1847, the Joaquin was nowhere fordable, being several hundred yards broad as high up as the Aux-um-ne River, even with its banks, and scattered in sloughs over all its lower bottoms. All the large tributaries, the Aux-um-ne, To-wal-um-ne, Stanislaus, and Mo-kel-um-ne, required to be boated, and were pouring down a deep volume of water from the mountains, one to two hundred yards wide. The high waters came from the melting snows, which, during the past winter, had accumulated to a great depth in the mountains, and, at the end of June, lay in the approaches to the Bear River pass, on a breadth of ten or fifteen miles, and this below the level of 7200 feet. In rainy seasons, when the rains begin with November, and the snows lie on the mountains till July, this river is navigable for eight months of the year—the length of time depending on the season.

The Cós-um-né was the last tributary of the San Joaquin, and the last river of its valley coming down from the Sierra Nevada. The Rio de los Americanos was the first tributary of the valley of the Sacramento, also coming down, like all the respectable tributaries of both rivers from the snowy summit and rainy sides of the great Sierra. The two valleys are one, only discriminated in description or reference by the name of the river which traverses the respective halves, as seen in the map. We entered the part of the valley which takes the name of its river, Sacramento, on the 21st day of March, going north, and continued our observations on that valley.

We remained several days on the Rio de los Americanos, to recruit our animals on the abundant range between the Sacramento and the hills. During this time the thermometer was at 35° at sunrise, 54° at 9 o'clock in the

morning, 63° at noon, 63° at 2 o'clock in the afternoon, 61° at 4, and 53° at sunset; the dew-point at corresponding times being 34°.0, 49°.9, 46°.6, 49°.4, 51°.6, 43°.7; and the quantity of moisture in a cubic foot of air being 2.519 grains, 4.235 grains, 3.808 grains, 4.161 grains, 4.484 grains, 3.469 grains.

We left the Rio de los Americanos on the 24th, ten miles above the mouth, travelling a little east of north, in the direction of the Bear River settlements, at the foot of the Emigrant Pass. The road led among oak timber, over ground slightly undulating, covered with grass intermingled with flowers. The thermometer at 4 was 76°, and at sunset 60°; the weather clear.

At sunrise of the 25th, the temperature was 36°, with an easterly wind and clear sky. In about thirty miles travel to the north, we reached the rancho of Mr. Keyser, on Bear River; an affluent to Feather River, the largest tributary of the Sacramento. The route lay over an undulating country—more so as our course brought us nearer the mountains—wooded with oaks and shrubbery in blossom, with small prairies intervening. Many plants were in flower, and among them the California poppy, unusually magnificent. It is the characteristic bloom of California at this season, and the Bear River bottoms, near the hills, were covered with it. We crossed several small streams, and found the ground miry from the recent rains. The temperature at 4 in the afternoon was 70°, and at sunset 58°, with an easterly wind, and the night bright and clear.

The morning of the 25th was clear, and warmer than usual; the wind south-easterly, and the temperature 40°. We travelled across the valley plain, and in about sixteen miles reached Feather River at twenty-six miles from its junction with the Sacramento, near the mouth of the Yuva, so called from a village of Indians who live on it. The river has high banks—twenty or thirty feet—and was here one hundred and fifty yards wide, a deep navigable stream. The Indians aided us across the river with canoes and small rafts. Extending along the bank in front of the village, was a range of wicker cribs, about twelve feet high, partly filled with what is there the Indians' staff of life—acorns. A collection of huts, shaped like bee-hives, with naked Indians sunning themselves on the tops, and these acorn cribs, are the prominent objects in an Indian village.

There is a fine farm, or *rancho*, on the Yuva, stocked with about 3000 head of cattle, and cultivated principally in wheat, with some other grains and vegetables, which are carried, by means of the river, to a market at San Francisco. Mr. Cordua, a native of Germany, who is proprietor of the place, informed me that his average harvest of wheat was about twenty-five bushels to the acre, which he supposed would be about the product of the wheat lands in the Sacramento valley. The labour on this and other farms in the valley is performed by Indians.

The temperature here was 74° at 2 in the

afternoon, 71° at 4, and 69° at sunset, with a north-easterly wind and clear sky.

At sunrise of the 27th the temperature was 42°, clear, with a north-easterly wind. We travelled northwardly, up the right bank of the river, which was wooded with large white and evergreen oaks, interspersed with thickets of shrubbery in full bloom. We made a pleasant journey of twenty-seven miles, and encamped at the bend of the river, where it turns from the course across the valley to run southerly to its junction with the Sacramento. The thermometer at sunset was at 67°, sky partially clouded, with southerly wind.

The thermometer at sunrise on the 28th was at 46°.5, with a north-easterly wind. The road was over an open plain, with a few small sloughs or creeks that do not reach the river. After travelling about fifteen miles we encamped on Butte Creek, a beautiful stream of clear water about fifty yards wide, with a bold current running all the year. It has large fertile bottoms, wooded with open groves, and having a luxuriant growth of pea vine among the grass. The oaks here were getting into general bloom. Fine ranchos have been selected on both sides the stream, and stocked with cattle, some of which were now very fat. A rancho here is owned by Neal, who formerly belonged to my exploring party. There is a *rancheria* (Indian village) near by, and some of the Indians gladly ran races for the head and offals of a fat cow which had been presented to us. They were *entirely* naked. The thermometer at 2 in the afternoon was at 70°, two hours later at 74°, and 65° at sunset; the wind east, and sky clear only in the west.

The temperature at sunrise the next day was 50°, with cumuli in the south and west, which left a clear sky at 9, with a north-west wind, and temperature of 64°. We travelled twenty miles, and encamped on Pine Creek, another fine stream, with bottoms of fertile land, wooded with groves of large and handsome oaks, some attaining to six feet in diameter, and forty to seventy feet in height. At 4 in the afternoon the thermometer showed 74°, and 64° at sunset; and the sky clear, except in the horizon.

March 30.—The sun rose in masses of clouds over the eastern mountains. A pleasant morning, with a sunrise temperature of 46°.5, and some mosquitoes—never seen, as is said, in the coast country; but at seasons of high water, abundant and venomous in the bottoms of the Joaquin and Sacramento. On the tributaries nearer the mountain but few are seen, and those go with the sun. Continuing up the valley, we crossed in a short distance a large wooded creek, having now about thirty-five feet breadth of water. Our road was over an upland prairie of the Sacramento, having a yellowish, gravelly soil, generally two or three miles from the river, and twelve or fifteen from the foot of the eastern mountains. On the west it was twenty-five or thirty miles to the foot of the mountains, which here make a bed of high and broken ranges.

In the afternoon, about half a mile above its mouth, we encamped on Deer Creek, another of those beautiful tributaries to the Sacramento. It has the usual broad and fertile bottom-lands common to these streams, wooded with groves of oak and a large sycamore, (*platanus occidentalis*), distinguished by bearing its balls in strings of three to five, and peculiar to California. Mr. Lassen, a native of Germany, has established a rancho here, which he has stocked, and is gradually bringing into cultivation. Wheat, as generally throughout the north country, gives large returns; cotton, planted in the way of experiment, was not injured by frost, and succeeded well; and he has lately planted a vineyard, for which the Sacramento valley is considered to be singularly well adapted. The seasons are not yet sufficiently understood, and too little has been done in agriculture, to afford certain knowledge of the capacities of the country. This farm is in the fortieth degree of latitude; our position on the river being in $30^{\circ} 57' 00''$, and longitude $121^{\circ} 56' 44''$, west from Greenwich, and elevation above the sea five hundred and sixty feet. About three miles above the mouth of this stream are the first rapids—the present head of navigation—in the Sacramento River, which, from the rapids to its mouth in the bay, is more than two hundred miles long, and increasing in breadth from one hundred and fifty yards to six hundred yards in the lower part of its course.

During six days that we remained here, from the 30th March to the 5th April, the mean temperature was 40° at sunrise, $52^{\circ}.5$ at 9 in the morning, $57^{\circ}.2$ at noon, $59^{\circ}.4$ at 2 in the afternoon, $58^{\circ}.8$ at 4, and 52° at sunset; at the corresponding times the dew-point was at $37^{\circ}.0$, $41^{\circ}.0$, $38^{\circ}.1$, $39^{\circ}.6$, $44^{\circ}.9$, $40^{\circ}.5$; and the moisture in a cubic foot of air 2.838 grains, 3.179 grains, 2.935 grains, 3.034 grains, 3.766 grains, 3.150 grains, respectively. Much cloudy weather and some showers of rain, during this interval, considerably reduced the temperature, which rose with fine weather on the 5th. Salmon was now abundant in the Sacramento. Those which we obtained were generally between three and four feet in length, and appeared to be of two distinct kinds. It is said that as many as four different kinds ascend the river at different periods. The great abundance in which this fish is found gives it an important place among the resources of the country. The salmon crowd in immense numbers up the Umpqua, Tlamath, and Trinity Rivers, and into every little river and creek on the coast north of the Bay of San Francisco, ascending the river Tlamath to the lake near its source, which is upwards of 4000 feet above the sea, and distant from it only about 200 miles.

In the evening of the 5th we resumed our journey northward, and encamped on a little creek, near the Sacramento, where an emigrant from "the States" was establishing himself, and had already built a house. It is a handsome place, wooded with groves of oak, and

along the creek are sycamore, ash, cottonwood, and willow. The day was fine, with a north-west wind.

The temperature at sunrise the next day, (April 6th,) was 42° , with a north-easterly wind. We continued up the Sacramento, which we crossed in canoes at a farm on the right bank of the river. The Sacramento was here about one hundred and forty yards wide, and with the actual stage of water, which I was informed continued several months, navigable for a steamboat. We encamped a few miles above, on a creek wooded principally with large oaks. Grass was good and abundant, with wild oats and pea vine in the bottoms. The day was fine, with a cool north-westerly breeze, which had in it the air of the high mountains. The wild oats here were not yet headed.

The snowy peak of Shastl bore directly north, showing out high above the other mountains. Temperature at sunset 57° , with a west wind and sky partly clouded.

April 7.—The temperature at sunrise was 37° , with a moist air; and a faintly-clouded sky indicated that the wind was southerly along the coast. We travelled toward the Shastl peak, the mountain ranges, on both sides of the valleys, being high and rugged, and snow-covered. Some remarkable peaks in the Sierra, to the eastward, are called the Sisters, and, nearly opposite, the coast range shows a prominent peak, which we have called Mount Linn.

Leaving the Sacramento, at a stream called Red Bank Creek, and continuing to the head of one of its forks, we entered on a high and somewhat broken upland, timbered with at least four varieties of oaks, with *mansanita*, (*arbutus Menziesii*), and other shrubby interspersed. A remarkable species of pine, having leaves in threes, (sometimes six to nine inches long,) with bluish foliage, and a spreading, oak-shaped top, was scattered through the timber. I have remarked that this tree grows lower down the mountains than the other pines, being found familiarly associated with the oaks, the first met after leaving the open valleys, and seeming to like a warm climate. Flowers were, as usual, abundant. The splendid California poppy characterized all the route along the valley. A species of clover was in bloom, and the berries of the *mansanita* were beginning to redden on some trees, while on others they were still in bloom. We encamped, at an elevation of about 1000 feet above the sea, on a large stream called Cottonwood Creek, wooded on the bottoms with oaks, and with cotton-woods along the bed, which is sandy and gravelly. The water was at this time about twenty yards wide, but is frequently fifty. The face of the country traversed during the day was gravelly, and the bottoms of the creek where we encamped have a sandy soil.

There are six or seven *rancherias* of Indians on the Sacramento River between the farm where we had crossed the Sacramento and the mouth of this creek, and many others

in the mountains about the heads of these streams.

The next morning was cloudy, threatening rain, but the sky grew brighter as the sun rose, and a southerly wind changed to north-west, which brought, as it never fails to bring, clear weather.

We continued sixteen miles up the valley, and encamped on the Sacramento River. In the afternoon (April 8) the weather again grew thick, and in the evening rain began to fall in the valley and snow on the mountains. We were now near the head of the lower valley, and the face of the country and the weather began sensibly to show the influence of the rugged mountains which surround and terminate it.

The valley of the Sacramento is divided into upper and lower—the lower two hundred miles long, the upper about one hundred; and the latter not merely entitled to the distinction of upper, as being higher up on the river, but also as having a superior elevation of some thousands of feet above it. The division is strongly and geographically marked. The Shastá peak stands at the head of the lower valley, in the forks of the river, rising from a base of about 1000 feet, out of a forest of heavy timber. It ascends like an immense column upwards of 14,000 feet, (nearly the height of Mont Blanc,) the summit glistening with snow, and visible, from favourable points of view, at a distance of one hundred and forty miles down the valley. The river here, in descending from the upper valley, plunges down through a *cañon*, falling 2000 feet in twenty miles. This upper valley is one hundred miles long, heavily timbered, the climate and productions modified by its altitude, its more northern position, and the proximity and elevation of the neighbouring mountains covered with snow. It contains valleys of arable land, and is deemed capable of settlement. Added to the lower valley, it makes the whole valley of the Sacramento three hundred miles long.

April 9.—At 10 o'clock the rain which commenced the previous evening had ceased, and the clouds clearing away, we boated the river, and continued our journey eastward toward the foot of the Sierra. The Sacramento bottoms here are broad and prettily wooded, with soil of a sandy character. Our way led through very handsome, open woods, principally of oaks, mingled with a considerable quantity of the oak-shaped pine. Interspersed among these were bouquets or thickets of *manzanita*, and an abundant white-flowering shrub, now entirely covered with small blossoms. The head of the valley here (lower valley) is watered by many small streams, having fertile bottom lands, with a good range of grass and acorns. In about six miles we crossed a creek twenty or twenty-five feet wide, and several miles farther descended into the broad bottoms of a swift stream about twenty yards wide, called Cow Creek, so named as being the range of a small band of cattle, which ran off here from a party on their way to Oregon. They are entirely wild, and are hunted like other game.

A large band of antelope was seen in the timber, and five or six deer came darting through the woods. An antelope and several deer were killed. There appears to be two species of these deer—both of the kind generally called black-tailed; one, a larger species, frequenting the prairies and lower grounds; the other, much smaller, and found in the mountains only. The mountains in the north-east were black with clouds when we reached the creek, and very soon a fierce hail-storm burst down on us, scattering our animals and covering the ground an inch in depth with hail-stones about the size of wild cherries. The face of the country appeared as whitened by a fall of snow, and the weather became unpleasantly cold. The evening closed in with rain, and thunder rolling around the hills. Our elevation here was between 1000 and 1100 feet. At sunrise the next morning the thermometer was at 33°. The surrounding mountains showed a continuous line of snow, and the high peaks looked wintry. Turning to the southward, we retraced our steps down the valley, and reached Mr. Lassen's, on Deer River, on the evening of the 11th. The Sacramento bottoms between Antelope and Deer River were covered with oats, which had attained their full height, growing as in sown fields. The country here exhibited the maturity of spring. The California poppy was everywhere forming seed pods, and many plants were in flower and seed together. Some varieties of clover were just beginning to bloom. By the middle of the month the seed-vessels of the California poppy, which, from its characteristic abundance, is a prominent feature in the vegetation, had attained their full size; but the seeds of this and many other plants, although fully formed, were still green-coloured, and not entirely ripe. At this time, I obtained from the San Joaquin valley seeds of the poppy, and other plants, black and fully ripe, while they still remained green in this part of the Sacramento—the effect of a warmer climate in the valley of the San Joaquin. The mean temperature for fourteen days, from the 10th to the 24th of April, was 43° at sunrise, 58° at nine in the morning, 64° at noon, 66° at 2 in the afternoon, 69° at 4, and 58° at sunset, (latitude 40°.) The thermometer ranged at sunrise from 38° to 51°, at 4 (which is the hottest of those hours of the day when the temperature was noted) from 53° to 88°, and at sunset from 49° to 65°. The dew-point was 40°.3 at sunrise, 47°.3 at 9 in the morning, 46°.1 at noon, 49°.2 at 2 in the afternoon, 49°.2 at 4, and 46°.6 at sunset; and the quantity of moisture in a cubic foot of air at corresponding times was 3.104 grains, 3.882 grains, 3.807 grains, 4.213 grains, 4.217 grains, 3.884 grains, respectively. The winds fluctuated between north-west and south-east, the temperature depending more upon the state of the sky than the direction of winds—a clouded sky always lowering the thermometer fifteen or twenty degrees in a short time. For the greater number of the days above given the

sky was covered, and the atmosphere frequently thick, with rain at intervals from the 19th to the 23d.

On the 25th May we returned to this place (Lassen's) from an excursion to the Upper Sacramento. The plants we had left in bloom were now generally in seed; and many, including the characteristic plants, perfectly ripe. The mean temperature of a few days ending May was 54°.7 at sunrise, 70°.6 at noon, and 67°.3 at sunset. Travelling south, into the more open and wider part of the valley, where the bordering mountains are lower, and showed less snow, the temperature increased rapidly. At the Buttes—an isolated mountain ridge about six miles long, and about 2690 feet above the sea—the mornings were pleasantly cool for a few hours, but before ten the heat of the sun became very great, though usually tempered by a refreshing breeze. The heat was usually greatest about four in the afternoon. The mean temperature from May 27th to June 6th, was 64° at sunrise, 79° at 9 in the morning, 86° at noon, 90° at 2 in the afternoon, 91° at 4, and 80° at sunset, ranging from 53° to 79° at sunrise—from 85° to 98° at 4 in the afternoon—and from 73° to 89° at sunset. The place of observation was at the eastern base of the Buttes, about 800 feet above the sea, latitude 39° 12', and one of the warmest situations in the Sacramento valley. At corresponding times the dew-point was at 56°.5, 62°.4, 66°.5, 68°.2, 66°.6, 66°.9, and the quantity of moisture in a cubic foot of air, 5.253 grains, 6.318 grains, 7.191 grains, 7.495 grains, 7.164 grains, and 7.269 grains, respectively. We felt the heat here more sensibly than at any other place where our journeying brought us in California. The hunters always left the camp before daylight, and were in by 9 o'clock, after which the sun grew hot. Game was very fat and abundant; upwards of eighty deer, elk, and bear were killed in one morning. The range consisted of excellent grasses, wild oats in fields, red and other varieties of clover, some of which were now in mature seed, and others beginning to flower. Oats were now drying in level places where exposed to the full influence of the sun, remaining green in moister places and on the hill slopes.

The mean temperature of the open valley between the Buttes and the American Fork, from the 8th to the 21st June, was 57° at sunrise, 74° at 9 in the morning, 85° at noon, 87° at 2 in the afternoon, 88° at 4, and 77° at sunset; ranging at sunrise from 51° to 61°; at 4 from 81° to 97°; and at sunset from 71° to 85°. The dew-point at corresponding times was 52°.8, 58°.8, 62°.1, 66°.8, 62°.5, 60°.7, and the quantity of moisture in a cubic foot of air being 4.685 grains, 5.709 grains, 6.320 grains, 7.217 grains, 6.377 grains, 5.973 grains, respectively.

Western Slope of the Sierra Nevada.—The western flank of this Sierra belongs to the maritime region of California, and is capable of adding greatly to its value. It is a long, wide slope, timbered and grassy, with intervals of

arable land, copiously watered with numerous and bold streams, and without the cold which its name and altitude might imply. In length it is the whole extent of the long valley at its base, five hundred miles. In breadth, it is from forty to seventy miles from the summit of the mountain to the termination of the foot hills in the edge of the valleys below, and almost the whole of it available for some useful purpose—timber, pasturage, some arable land, mills, quarries—and so situated as to be convenient for use, the wide slope of the mountain being of easy and practicable descent. Timber holds the first place in the advantages of this slope, the whole being heavily wooded, first with oaks, which predominate to about half the elevation of the mountain; and then with pines, cypress, and cedars, the pines predominating; and hence called the pine region, as that below is called the oak region, though mixed with other trees. The highest summits of the Sierra are naked, massive granite rock, covered with snow, in sheltered places, all the year round. The oaks are several varieties of white and black oak, and evergreens, some of them resembling live oak. Of the white oak there are some new species, attaining a handsome elevation, upon a stem six feet in diameter. Acorns of uncommon size, and not bad taste, used regularly for food by the Indians, abound on these trees, and will be of great value for stock. The cypress, pine, and cedar are between one hundred and two hundred and fifty feet high, and five to twelve feet in diameter, with clean solid stems. Grass abounds on almost all parts of the slope, except towards the highest summits, and is fresh and green all the year round, being neither killed by cold in the winter, nor dried by want of rain in the summer. The foot hills of the slope are sufficiently fertile and gentle to admit of good settlements; while valleys, coves, beaches, and meadows of arable land are found throughout. Many of the numerous streams, some of them amounting to considerable rivers, which flow down the mountain side, make handsome, fertile valleys. All these streams furnish good water power. The climate in the lower part of the slope is that of constant spring, while above the cold is not in proportion to the elevation. Such is the general view of the western slope of the great Sierra; but deeming that all general views should rest upon positive data, I add some notes taken from actual observations made in different ascents and descents in the winter and spring of 1845-'46, and in different degrees of latitude from 35° to 41°.

December 4, 1845.—Descent from the pass, at the head of Salmon Trout River, latitude 39° 17', elevation 7200 feet. At 3 in the afternoon the temperature at 46°, at sunset 34°, at sunrise next morning 22°; the sky perfectly clear; no snow in the pass, but much on the mountain tops. Here the present emigrant road now crosses. A fork of Bear River (a considerable stream tributary to Feather River, which falls into the Sacramento) leads from

the pass, and the road follows it; but finding this a rugged way, we turned to the south, and encamped in a mountain meadow of good green grass. A yellow moss very abundant on the north sides of the pines.

December 6.—The route was over good travelling ground, through open pine forest on a broad, leading ridge, affording an excellent road. A species of cedar (*Thuja gigantea*) occurred, often of extraordinary height and size. *Pinus lambertiani* was one of the most frequent trees, distinguished among cone-bearing tribes by the length of its cones, sometimes sixteen or eighteen inches long. The Indians eat the inner part of the burr, and large heaps of them were seen where they had been collected. Leaving the higher ridges, and gaining the smoother spurs, and descending about 4000 feet, the face of the country changed rapidly. The country became low, rolling, and pretty; the pines began to disappear, and varieties of oak, and principally an evergreen resembling live oak, became the predominating forest growth. These oaks bear great quantities of large acorns, the principal food of all the wild Indians. At a village of a few huts which we came upon, there was a large supply of these acorns—eight or ten cribs of wicker work, containing about twenty bushels each. The best acorns are obtained from a large tree belonging to the division of white oaks, which is very abundant, and generally forms the groves on the bottom lands of the streams—standing apart, with a clean undergrowth of grass, giving them the appearance of cultivated parks. It is a noble forest tree, already mentioned as a new species, sixty to eighty feet high, with a tufted summit of spreading branches, and frequently attains a diameter of six feet. The largest we measured reached eleven feet. The evergreen oaks generally have a low growth, with long branches and spreading tops. Some of them are suitable for ship-timber, and have already been used for that purpose.

At our evening encampment of the 8th, which was at an elevation of five hundred feet above the sea, latitude $38^{\circ} 53'$, and distant from the seacoast about one hundred miles, the temperature at sunset was 48° , the sky clear and calm, weather delightful, and the vegetation that of early spring. We were still upon the foot hills of the mountain, where the soil is sheltered by woods, and where rain falls much more frequently than in the open Sacramento valley, near the edge of which we then were. I have been in copious, continuous rains of eighteen or twenty hours' duration, in the oak region of the mountain, when not a drop fell in the valley below. Innumerable small streams have their rise and course through these foot hills, which never reach the river of the valley, but are absorbed in its light soil. The large streams coming from the upper parts of the mountain make valleys of their own, of fertile soil, covered with luxuriant grass and interspersed with groves. This is the general character of the foot hills throughout the entire length of the

Sacramento and San Joaquin valleys—a broad belt of country, and probably destined to become a vine-growing, as well as a grain and pastoral country.

December 9.—Entered the valley of the Sacramento. Fresh, green grass, for eight or ten miles into the valley, cattle feeding upon it, or lying under the shade of trees—the shade being pleasant to our own feelings. Further in, towards the middle of the valley, where the spring rains had not yet commenced, the country looked parched and dry, the grass eaten down by the cattle, which were quite fat and fine beef.

Ascent, December and January, 1845-'46, latitude 37° . Entering the mountain by the Rio Reyes of Tulare Lake, (December 24,) we found its general character very similar to what it was in the more northern part, (latitude 39° ;) the timber perhaps less heavy and more open, and the mountain generally more rough, extremely rocky in the upper parts, but wooded up to the granite ridges which compose its rocky eminences. At the elevation of 3500 feet, the ridges were covered with oaks and pines intermixed, and the bottom lands with oaks, cotton-wood, and sycamores. Small varieties of evergreen oaks reached the observed height of 9480 feet, at which elevation *pinus lambertiani*, and other varieties of pine, fir, and cypress, were large and lofty trees. During the latter part of December and first days of January the average temperature of the oak region, going to about 5000 feet above the sea, was, at sunrise, $34^{\circ}.6$, and at sunset $50^{\circ}.5$. In the piney region, between this height and 1100 feet, the average at sunrise was $28^{\circ}.7$, and at sunset $30^{\circ}.4$. The lowest observed temperature was at sunset of January 1, when the sky had entirely cleared after a severe snow-storm. The thermometer then stood at $8^{\circ}.5$, the elevation above the sea being 9400 feet. Descending to the oak region, spring weather, rain and sunshine, prevailed. At an elevation of 4500 feet, the temperature, at the night encampment of the 3d day of January, was 38° at sunset, and the same at sunrise, the grass green, and growing freshly under the oaks. The snow-line was then at about 6000 feet above the level of the sea. Rain had begun to fall in the valley of the San Joaquin in this latitude (37°) on the 20th of December, and snow at the same time upon the summit of the mountain. The mean temperature of the mountain during this ascent and descent (December 24 to January 8) was $31^{\circ}.6$ at sunrise, $40^{\circ}.4$ at sunset.

Descent by Mr. Kern's party, latitude $35^{\circ} 30'$, December and January. Mr. Kern, with a detached party, had crossed the Sierra about one hundred miles further south, nearly opposite the head of the Tulare Lakes, and remained encamped in a valley or cove, near the summit of the Sierra, at the head of Kern's River, from December 27 to January 17; the cove well wooded with evergreen oaks, some varieties of pine, firs, and cedars, maintaining the usual majestic growth which characterizes the cone-bearing trees of the Sierra.

Until the 12th of January the weather almost that of summer, when the rains commenced, which was almost three weeks later than in latitude 37°. The 17th there was a fall of snow, washed off in the cove by a rain in the afternoon, the high ridges remaining covered a foot deep. The mean temperature in the cove from December 27 to January 17 was, at sunrise, 26°—at noon, 60°—at sunset, 52°. After that, snow and rain, alternated with sunshine, snow remaining on the ridges, and winter set in fairly on all the upper half of the mountain.

Ascent about latitude 41°, (April and May,) April 26, 1846—head of the lower Sacramento valley. Left the river Sacramento, going up one of the many pretty little streams that flow into the river around the head of the lower valley. On either side, low steep ridges were covered along their sunmits with pine, and oaks occupied the somewhat broad bottoms of the creek. Snowy peaks made the horizon on the right, and the temperature at noon was 71°, but the day was still and hot. The small streams are numerous here, and have much bottom land; grass and acorns abundant, and both of excellent quality. Encamped in the evening in latitude 40° 38' 58", elevation above the sea 1080 feet, temperature at sunset 56°, weather pleasant. Grisly bears numerous, four being killed by the hunters after we had encamped.

April 27.—Found a good way along a flat ridge, a pretty, open mountain stream on the right, the country beginning to assume a mountainous character, wooded with mingled oak and long-leaved pine, and having a surface of scattered rocks, with grass and flowers. At noon, crossing a high ridge, the thermometer showed 61°. At night, at an elevation of 2460 feet, we encamped on a creek that went roaring into the valley; temperature at sunset 52°.

28th, continued up the stream on which we had encamped, the country rising rapidly, clothed with heavy timber. On crossing one of the high ridges, snow and *pinus lambertiani* appeared together. An hour before noon, reached the pass in the main ridge, in an open pine forest, elevation 4600 feet, thermometer at 50°, latitude near 41°. Snow in patches, and deciduous oaks mixed with the pines.

Returning upon a different line, towards the lower valley of the Sacramento, near its head, we found in the descent a truly magnificent forest. It was composed mainly of a cypress and a lofty white cedar (*Thuja gigantea*) one hundred and twenty to one hundred and forty feet high, common in the mountains of California. All were massive trees; but the cypress was distinguished by its uniformly great bulk. None were seen so large as are to be found in the coast mountains near Santa Cruz, but there was a greater number of large trees—seven feet being a common diameter—carrying the bulk eighty or a hundred feet without a limb. At an elevation of 4600 feet the temperature at sunset was 48°, and at sunrise 37°. Oaks already appeared among the pines, but did not yet show a leaf. In the meadow

marshes of the forest grass was green, but not yet abundant, and the deer were poor. Descending the flanks of the mountain, which fell gradually towards the plain, the way was through the same deep forest. At the elevation of about 3000 feet the timber had become more open, the hills rolling, and many streams made pretty bottoms of rich grass; the black oaks in full and beautiful leaf were thickly studded among the open pines, which had become much smaller and fewer in variety, and when we halted near midday, at an elevation of 2200 feet, we were in one of the most pleasant days of late spring; cool and sunny, with a pleasant breeze, amidst a profusion of various flowers; many trees in dark summer foliage, and some still in bloom. Among these the white spikes of the horse-chestnut, common through all the oak region, were conspicuous. We had again reached summer weather, and the temperature at noon was 70°.

In the afternoon we descended to the open valley of the Sacramento, 1000 feet lower, where the thermometer was 68° at sunset, and 54° at sunrise. This was the best timbered region that I had seen, and the more valuable from its position near the head of the lower valley of the Sacramento, and accessible from its waters.

Bay of San Francisco and dependent country.—The Bay of San Francisco has been celebrated, from the time of its first discovery, as one of the finest in the world, and is justly entitled to that character even under the seaman's view of a mere harbour. But when all the accessory advantages which belong to it—fertile and picturesque dependent country; mildness and salubrity of climate; connection with the great interior valley of the Sacramento and San Joaquin; its vast resources for ship-timber, grain and cattle—when these advantages are taken into the account, with its geographical position on the line of communication with Asia, it rises into an importance far above that of a mere harbour, and deserves a particular notice in any account of maritime California. Its latitudinal position is that of Lisbon; its climate is that of southern Italy; settlements upon it for more than half a century attest its healthiness; bold shores and mountains give it grandeur; the extent and fertility of its dependent country give it great resources for agriculture, commerce, and population.

The Bay of San Francisco is separated from the sea by low mountain ranges. Looking from the peaks of the Sierra Nevada, the coast mountains present an apparently continuous line, with only a single gap, resembling a mountain pass. This is the entrance to the great bay, and is the only water communication from the coast to the interior country. Approaching from the sea, the coast presents a bold outline. On the south, the bordering mountains come down in a narrow ridge of broken hills, terminating in a precipitous point, against which the sea breaks heavily. On the northern side, the mountain presents a

bold promontory, rising in a few miles to a height of two or three thousand feet. Between these points is the strait—about one mile broad in the narrowest part, and five miles long from the sea to the bay. Passing through this gate,* the bay opens to the right and left, extending in each direction about thirty-five miles, having a total length of more than seventy, and a coast of about two hundred and seventy-five miles. It is divided, by straits and projecting points, into three separate bays, of which the northern two are called San Pablo and Suisoon bays. Within, the view presented is of a mountainous country, the bay resembling an interior lake of deep water, lying between parallel ranges of mountains. Islands, which have the bold character of the shores—some mere masses of rock, and others grass-covered, rising to the height of three and eight hundred feet—break its surface, and add to its picturesque appearance. Directly fronting the entrance, mountains a few miles from the shore rise about 2000 feet above the water, crowned by a forest of the lofty cypress, which is visible from the sea, and makes a conspicuous landmark for vessels entering the bay. Behind, the rugged peak of Mount Diablo, nearly 4000 feet high, (3770,) overlooks the surrounding country of the bay and San Joaquin. The immediate shore of the bay derives, from its proximate and opposite relation to the sea, the name of *contra costa*, (counter-coast, or opposite coast.) It presents a varied character of rugged and broken hills, rolling and undulating land, and rich alluvial shores backed by fertile and wooded ranges, suitable for towns, villages, and farms, with which it is beginning to be dotted. A low alluvial bottom land, several miles in breadth, with occasional open woods of oak, borders the foot of the mountains around the southern arm of the bay, terminating on a breadth of twenty miles in the fertile valley of St. Joseph, a narrow plain of rich soil, lying between ranges from two to three thousand feet high. The valley is openly wooded with groves of oak, free from underbrush, and, after the spring rains, covered with grass. Taken in connection with the valley of San Juan, with which it forms a continuous plain, it is fifty-five miles long and one to twenty broad, opening into smaller valleys among the hills. At the head of the bay it is twenty miles broad, and about the same at the southern end, where the soil is beautifully fertile, covered in summer with four or five varieties of wild clover several feet high. In many places it is overgrown with wild mustard, growing ten or twelve feet high, in almost impenetrable fields, through which roads are made like lanes. On both sides the mountains are fertile, wooded, or covered with grasses and scattered trees. On the west it is protected from the chilling influence of the north-west winds by the *cuesta de los gatos*,

(wild-cat ridge,) which separates it from the coast. This is a grassy and timbered mountain, watered with small streams, and wooded on both sides with many varieties of trees and shrubbery, the heavier forests of pine and cypress occupying the western slope. Timber and shingles are now obtained from this mountain; and one of the recently discovered quicksilver mines is on the eastern side of the mountain, near the Pueblo of San José. This range terminates on the south in the Anno Nuevo point of Monterey Bay, and on the north declines into a ridge of broken hills about five miles wide, between the bay and the sea, and having the town of San Francisco on the bay shore, near its northern extremity.

Sheltered from the cold winds and fogs of the sea, and having a soil of remarkable fertility, the valley of St. Joseph (San José) is capable of producing in great perfection many fruits and grains which do not thrive on the coast in its immediate vicinity. Without taking into consideration the extraordinary yields which have sometimes occurred, the fair average product of wheat is estimated at fifty fold, or fifty for one sown. The mission establishments of Sana Clara and San José, in the north end of the valley, were formerly, in the prosperous days of the missions, distinguished for the superiority of their wheat crops.

The slope of alluvial land continues entirely around the eastern shore of the bay, intersected by small streams, and offering some points which good landing and deep water, with advantageous positions between the sea and interior country, indicate for future settlement.

The strait of Carquines, about one mile wide and eight or ten fathoms deep, connects the San Pablo and Suisoon bays. Around these bays smaller valleys open into the bordering country, and some of the streams have a short launch navigation, which serves to convey produce to the bay. Missions and large farms were established at the head of navigation on these streams, which are favourable sites for towns or villages. The country around the Suisoon bay presents smooth low ridges and rounded hills, clothed with wild oats, and more or less openly wooded on their summits. Approaching its northern shores from Sonoma, it assumes, though in a state of nature, a cultivated and beautiful appearance. Wild oats cover it in continuous fields, and herds of cattle and bands of horses are scattered over low hills and partly isolated ridges, where blue mists and openings among the abruptly terminating hills indicate the neighbourhood of the bay.

The Suisoon is connected with an expansion of the river formed by the junction of the Sacramento and San Joaquin, which enter the

* Called *Chrysopylos* (golden gate) on the map, on the same principle that the harbour of *Byzantium* (Constantinople afterwards) was called *Chrysoceras* (golden horn.) The form of the harbour, and its advantages for commerce, (and that before it became an entrepot of eastern com-

merce,) suggested the name to the Greek founders of *Byzantium*. The form of the entrance into the Bay of San Francisco, and its advantages for commerce, (Asiatic inclusive,) suggest the name which is given to this entrance.

Francisco Bay in the same latitude, nearly, as the mouth of the Tagus at Lisbon. A delta of twenty-five miles in length, divided into islands by deep channels, connects the bay with the valley of the San Joaquin and Sacramento, into the mouths of which the tide flows, and which enter the bay together as one river.

Such is the bay, and the proximate country and shores of the Bay of San Francisco. It is not a mere indentation of the coast, but a little sea to itself, connected with the ocean by a defensible gate, opening out between seventy and eighty miles to the right and left, upon a breadth of ten to fifteen, deep enough for the largest ships, with bold shores suitable for towns and settlements, and fertile adjacent country for cultivation. The head of the bay is about forty miles from the sea, and there commences its connection with the noble valleys of the San Joaquin and Sacramento.

Coast Country north of the Bay of San Francisco.—Between the Sacramento valley and the coast, north of the Bay of San Francisco, the country is broken into mountain ridges and rolling hills, with many very fertile valleys, made by lakes and small streams. In the interior it is wooded, generally with oak, and immediately along the coast presents open prairie lands, among heavily timbered forests, having a greater variety of trees, and occasionally a larger growth than the timbered region of the Sierra Nevada. In some parts it is entirely covered, in areas of many miles, with a close growth of wild oats, to the exclusion of almost every other plant. In the latter part of June and beginning of July, we found here a climate sensibly different from that of the Sacramento valley, a few miles east, being much cooler and moister. In clear weather, the mornings were like those of the Rocky Mountains in August, pleasant and cool, following cold clear nights. In that part lying nearer the coast, we found the mornings sometimes cold, accompanied with chilling winds; and fogs frequently came rolling up over the ridges from the sea. These sometimes rose at evening, and continued until noon of the next day. They are not dry, but wet mists, leaving the face of the country covered as by a drizzling rain. This sometimes causes rust in wheat grown within its influence, but vegetables flourish and attain extraordinary size.

I learned from Captain Smith, a resident at Bodega, that the winter months make a delightful season—rainy days (generally of warm showers) alternating with mild and calm, pleasant weather, and pure bright skies—much preferable to the summer, when the fogs and strong north-west winds, which prevail during the greater part of the year, make the morning part of the day disagreeably cold.

Owing probably to the fogs, spring is earlier along the coast than in the interior, where, during the interval between the rains, the ground becomes very dry. Flowers bloom in December, and by the beginning of February grass acquires a strong and luxuriant growth, and fruit trees (peach, pear, apple, &c.) are

covered with blossoms. In situations immediately open to the sea the fruit ripens late, generally at the end of August, being retarded by the chilling influence of the north-west winds: a short distance inland, where intervening ridges obstruct these winds and shelter the face of the country, there is a different climate and a remarkable difference in the time of ripening fruits; the heat of the sun has full influence on the soil, and vegetation goes rapidly to perfection.

The country in July began to present the dry appearance common to all California as the summer advances, except along the northern coast within the influence of the fogs, or where the land is sheltered by forests, and in the moist valleys of streams and coves of the hills. In some of these was an uncommonly luxuriant growth of oats, still partially green, while elsewhere they were dried up; the face of the country presenting generally a mellow and ripened appearance, and the small streams beginning to lose their volume, and draw up into the hills.

This northern part of the coast country is heavily timbered, more so as it goes north to the Oregon boundary, (42°), with many bold streams falling directly into the sea.

The Country between the Bays of San Francisco and Monterey.—In the latter part of January, 1846, a few shrubs and flowers were already in bloom on the sandy shore of Monterey Bay, (latitude 36° 40'.) Among these were the California poppy, and *nemophila insignis*.

On the 5th February, I found many shrubs and plants in bloom in the coast mountains bordering St. Joseph's valley, between Monterey and the Bay of San Francisco; and vegetation appeared much more green and spring-like, and further advanced, than in the plains. About the middle of February I noticed the geranium in flower in the valley; and from that time vegetation began generally to bloom. Cattle were obtained in February, from ranchos among the neighbouring hills, extremely fat, selected from the herds in the range.

During the months of January and February rainy days alternated with longer intervals of fair and pleasant weather, which is the character of the rainy season in California. The mean temperature in the valley of St. Joseph—open to the Bay of San Francisco—from the 13th to the 22d of February, was 50° at sunrise, and 61° at sunset. The oaks in this valley, especially along the foot of the hills, are partly covered with long hanging moss—an indication of much humidity in the climate.

We remained several days, in the latter part of February, in the upper portion of the coast mountain between St. Joseph and Santa Cruz. The place of our encampment was 2000 feet above the sea, and was covered with a luxuriant growth of grass, a foot high in many places. At sunrise the temperature was 40°; at noon 60°; at 4 in the afternoon 65°; and 63° at sunset; with very pleasant weather. The mountains were wooded with many varie-

ties of trees, and in some parts with heavy forests. These forests are characterized by a cypress (*taxodium*) of extraordinary dimensions, already mentioned among the trees of the Sierra Nevada, which is distinguished among the forest trees of America by its superior size and height. Among many which we measured in this part of the mountain, nine and ten feet diameter was frequent—eleven sometimes; but going beyond eleven only in a single tree, which reached fourteen feet in diameter. Above two hundred feet was a frequent height. In this locality the bark was very deeply furrowed, and unusually thick, being fully sixteen inches in some of the trees. The tree was now in bloom, flowering near the summit, and the flowers consequently difficult to procure. This is the staple timber-tree of the country, being cut into both boards and shingles, and is the principal timber sawed at the mills. It is soft, and easily worked, wearing away too quickly to be used for floors. It seems to have all the durability which anciently gave the cypress so much celebrity. Posts which have been exposed to the weather for three quarters of a century (since the foundation of the missions) show no marks of decay in the wood, and are now converted into beams and posts for private buildings. In California this tree is called the *palo colorado*. It is the king of trees.

Among the oaks is a handsome lofty evergreen species, specifically different from those of the lower grounds, and in its general appearance much resembling hickory. The bark is smooth, of a white colour, and the wood hard and close-grained. It seems to prefer the north hill-sides, where some were nearly four feet in diameter and a hundred feet high.

Another remarkable tree of these woods is called in the language of the country *madrono*. It is a beautiful evergreen, with large, thick, and glossy digitate leaves, the trunk and branches reddish coloured, and having a smooth and singularly naked appearance, as if the bark had been stripped off. In its green state the wood is brittle, very heavy, hard, and close-grained; it is said to assume a red colour when dry, sometimes variegated, and susceptible of a high polish. This tree was found by us only in the mountains. Some measured nearly four feet in diameter, and were about sixty feet high.

A few scattered shrubs were now showing throughout the forests, and on the open ridges shrubs were flowering; but the bloom was not yet general.

On the 25th February, we descended to the coast near the north-western point of Monterey bay, losing our fine weather, which in the evening changed into a cold south-easterly storm, continuing with heavy and constant rains for several days.

During this time the mean temperature was 53° at sunrise, 56°·5 at 9 A. M., 57°·5 at noon, 54°·5 at 2 in the afternoon, 53°·4 at 4, and 52°·7 at sunset. On the 28th, a thick fog was over the bay and on the mountains at sunrise, and the thermometer was at 33°—15° below

the ordinary temperature—rising at 9 o'clock to 59°. These fogs prevail along the coast during a great part of the summer and autumn, but do not cross the ridges into the interior. This locality is celebrated for the excellence and great size of its vegetables, (especially the Irish potato and onions,) with which, for this reason, it has for many years supplied the shipping which visits Monterey. A forest of *palo colorado* at the foot of the mountains in this vicinity, is noted for the great size and height of the trees. I measured one which was 275 feet in height, and fifteen feet in diameter, three feet above the base. Though this was distinguished by the greatest girth, other surrounding trees were but little inferior in size and still taller. Their colossal height and massive bulk give an air of grandeur to the forest.

These trees grow tallest in the bottom lands, and prefer moist soils and north hill-sides. In situations where they are protected from the prevailing north-west winds, they shoot up to a great height; but wherever their heads are exposed, these winds appear to chill them and stop their growth. They then assume a spreading shape, with larger branches, and an apparently broken summit.

The rain storm closed with February, and the weather becoming fine, on the 1st of March we resumed our progress along the coast. Over the face of the country between Santa Cruz and Monterey, and around the plains of St. John, the grass, which had been eaten down by the large herds of cattle, was now everywhere springing up; flowers began to show their bloom, and in the valleys of the mountains bordering the Salinas plains, (a plain of some fifty miles in length, made by the Salinas River,) wild oats were three feet high, and well headed, by the 6th of March.

During three days that we remained on one of these mountains, at an elevation of 2200 feet above the sea, and in sight of Monterey, the mean temperature was 44° at sunrise, 55° at 9 in the morning, 60° at noon, 62° at 2 in the afternoon, 57° at 4, and 53° at sunset. At the same hours, the dew-point was at 43°·0, 48°·1, 52°·8, 54°·9, 52°·9, 51°·6, and the quantity of moisture in a cubic foot of air, 3,283 grains, 3,982 grains, 4,726 grains, 4,972 grains, 4,683 grains, and 4,558 grains, respectively. The weather remained bright and pleasant; fogs sometimes covering the mountains at sunrise, but going off in a few hours. These are open mountains, untimbered; but fertile in oats and other grasses, affording fine range for cattle. Oaks and pines are scattered thinly over their upper parts, and in the higher and more exposed situations the evergreen oaks show the course and influence of the north-west winds, stunted and blighted by their chillness, bent to the ground by their force, and growing in that form.

Descending into the valley of the San Joaquin, (March 11th,) we found almost a summer temperature, and the country clothed in the floral beauty of advancing spring.

Southern Country and Rainy Season, (lati-

tudes 32°—35°.)—South of Point Concepcion, the climate and general appearance of the country exhibit a marked change. The coast from that cape trends almost directly east, the face of the country has a more southern exposure, and is sheltered by ranges of low mountains from the violence and chilling effect of the north-west winds; hence the climate is still more mild and genial, fostering a richer variety of productions, differing in kind from those of the northern coast.

The face of the country along the coast is generally naked, the lower hills and plains devoid of trees, during the summer heats parched and bare, and water sparsely distributed. The higher ridges and the country in their immediate vicinity are always more or less, and sometimes prettily, wooded. These usually afford water and good green grass throughout the year. When the plains have become dry, parched and bare of grass, the cattle go up into these ridges, where, with cooler weather and shade, they find water and good pasture. In the driest part of the year we found sheep and cattle fat, and saw flowers blooming in all the months of the year. Along the foot of the main ridges the soil is rich and comparatively moist, wooded, with grass and water abundant; and many localities would afford beautiful and productive farms. The ranges of the Sierra Nevada (here approaching its termination) still remain high—some peaks always retaining snow—and afford copious streams, which run all the year. Many of these streams are absorbed in the light soil of the larger plains before they reach the sea. Properly directed, the water of these rivers is sufficient to spread cultivation over the plains. Throughout the country every farm or *ranchito* has its own springs or running stream sufficient for the support of stock, which hitherto has made the chief object of industry in California.

The soil is generally good, of a sandy or light character, easily cultivated, and in many places of extraordinary fertility. Cultivation has always been by irrigation, and the soil seems to require only water to produce vigorously. Among the arid brush-covered hills south of San Diego, we found little valleys converted by a single spring into crowded gardens, where pears, peaches, quinces, pomegranates, grapes, olives, and other fruits grew luxuriantly together, the little stream acting upon them like a principle of life. The southern frontier of this portion of California seems eminently adapted to the cultivation of the vine and the olive. A single vine has been known to yield a barrel of wine; and the olive trees are burdened with the weight of fruit.

During the month of August the days are bright and hot, the sky pure and entirely cloudless, and the nights cool and beautifully serene. In this month fruits generally ripen—melons, pears, peaches, prickly fig, (*cactus tuña*), &c.—and large bunches of ripe grapes are scattered numerously through the vineyards, but do not reach maturity until the following month. After the vintage, grapes are hung up

in the houses, and so kept for use throughout the winter.

The mornings in September are cool and generally delightful—we sometimes found them almost cold enough to freeze—the mid-day hours bright and hot, but a breeze usually made the shade pleasant; the evenings calm, and nights cool and clear when unobscured by fogs. We reached the southern country at the end of July; and the first clouds we saw appeared on the 6th September at sunset, gradually spreading over the sky, and the morning was cloudy, but clear again before noon. Lighting at this time was visible in the direction of Sonora, where the rainy season had already commenced, and the cloudy weather was perhaps indicative of its approach here. On some nights the dews were remarked to be heavy; and as we were journeying along the coast between San Diego and Santa Barbara, fogs occasionally obscured the sunset over the ocean, and rose next morning with the sun. On the wooded plain, at the foot of the San Gabriel mountain, in the neighbourhood of Santa Barbara, and frequently along the way, the trees were found to be partly covered with moss.

Country between the Santa Barbara Mountain and Monterey, (latitude 34° 30' to 36° 30'.)—About the middle of September we encamped near the summit of the *Cuesta de Santa Ines*, (Santa Barbara Mountain,) on a little creek with cold water, good fresh grass, and much timber; and thenceforward north along the mountain behind the Santa Ines mission, the country assumed a better appearance, generally well wooded and tolerably well covered with grass of good quality—very different from the dry, naked, and parched appearance of the country below Santa Barbara. The neighbouring mountain exhibited large timber, redwood or pine, probably the latter. Water was frequent in small running streams. Crossing the fertile plain of San Luis Obispo, (lat. 35°,) a sheltered valley noted for the superiority of its olives, we entered the Santa Lucia range, which lies between the coast and the Salinas, or Buenaventura River (of the Bay of Monterey.) We found this a beautiful mountain, covered thickly with wild oats, prettily wooded, and having on the side we ascended (which is the water shed) in every little hollow a running stream of cool water, which the weather made delightful. The days were hot, at evening cool, and the morning weather clear and exhilarating. Descending into the valley, we found it open and handsome, making a pleasing country, well wooded, and everywhere covered with grass of a good quality. The coast range is wooded on both sides and to the summit with varieties of oaks and pines. The upper part of the Salinas valley, where we are now travelling, would afford excellent stock farms, and is particularly well suited to sheep. The country never becomes miry in the rainy season, and none are lost by cold in the mild winter.

The good range, grass and acorns, made game abundant, and deer and grisly bear were

numerous. Twelve of the latter were killed by the party in one thicket.

Lower down, in the neighbourhood of San Miguel, the country changed its appearance, losing its timbered and grassy character, and showing much sand. The past year had been one of unusual drought, and the river had almost entirely disappeared, leaving a bare sandy bed with a few pools of water. About fifteen miles below San Miguel it enters a gorge of the hills, making broad thickly-wooded bottoms, and affording good range and abundance of water, the bed being sheltered by the thick timber. The lower hills and spurs from the ranges, bordering the river, are very dry and bare, affording little or no grass. Approaching the mission of Soledad, the river valley widens, making fertile bottoms and plains of arable land, some fifteen to twenty miles broad, extending to Monterey Bay, and bordered by ranges of mountain from two to three thousand feet high. These ranges have the character of fertile mountains, their hills being covered with grass and scattered trees, and their valleys producing fields of wild oats, and wooded with oak groves. Being unsheltered by woods, water is not abundant in the dry season, but at the end of September we found springs among the hills, and water remained in the creek beds.

On the evening of the 25th September, *cumuli* made their appearance in the sky, and the next morning was cloudy with a warm southerly wind and a few drops of rain—the first of the rainy season. The weather then continued uninterruptedly dry through all October—fair and bright during the first part, but cloudy during the latter half. At the end of the month the rainy season set in fully, consisting generally of rain squalls with bright weather intervening, and occasional south-easterly storms continuing several days. The previous seasons had been very short and light for several years, and the country had suffered from the consequent drought. The present season commenced early, and was very favourable. Much rain fell in the low country, and snow accumulated to a great depth in the high mountains. The first rains changed the face of the country. Grass immediately began to shoot up rapidly, and by the end of the first week of November the dead hue of the hills around Monterey had already given place to green.

A brief sketch of the weather during a journey in this year from the mission of San Juan Bautista (latitude 37°) to Los Angeles will exhibit the ordinary character of the season.

In the valley of San Juan, during the latter half of November, there was no rain; the weather, generally, pleasant and bright, with occasional clouds. The night clear and cool, occasionally cold; the mornings clear and sharp with hoar frost sometimes covering the ground. The days were warm and pleasant, and the evenings mild and calm. On some mornings a thick fog settled down immediately after sunrise, but in a few hours cleared off into a pleasant day.

The falling weather recommenced on the 30th, with a stormy day of spring; blue sky in spots, rapidly succeeded by masses of dark clouds and pouring rain, which fell heavily during greater part of the night.

The morning of the 1st December was partially clear, but rain recommenced in a few hours, with sky entirely clouded. The weather brightened at noon, and from a high point of the hills bordering the San Juan River valley, up which we were travelling, snow was visible on summits of the dividing range between the San Joaquin valley and the coast. It rained heavily and incessantly during the night, and continued all the next day. In the night the sky cleared off bright with a north wind, but clouded up at morning, with rain and a broken sky. There were showers of rain during the day, with intervals of bright and hot sun; and the sky at sunset was without a cloud.

During the day and night of the 4th, there were occasional showers. The sky was tolerably clear on the morning of the 5th, with a prospect of fair weather. The tents were frozen, and snow appeared on the near ridges. We were then in a small interior valley of the mountains, bordering the Salinas River, and about 1000 feet above the sea.

December the 6th was a beautiful day, followed by a cold frosty night.

The next day we descended to the valley of the Salinas River, the weather continuing clear and pleasant during the day. Snow appeared on the mountains on both sides of the valley, and a cloud from some of them gave a slight shower during the night. Several successive days were clear with hot sun; the nights cold, starry, and frosty. The new grass on the hills was coming out vigorously. The morning of the 10th was keen and clear, with scattered clouds, and a southerly wind, which brought up showers of rain at night, followed by fog in the morning.

On the 12th, at the mission of Santa Margarita, in the head of the Salinas valley, rain began in the afternoon, with a cold wind, and soon increased to a south-easterly storm, with heavy rain during all the night. The 13th was cloudy, with occasional showers. During the night the weather became very bad, and by morning had increased to a violent and cold south-easterly rain storm. In the afternoon the storm subsided, and was followed by several days of variable weather.

By the 19th, the country where we were travelling between San Luis Obispo and the Cuesta of Santa Ines, showed a handsome covering of grass, which required two weeks more to become excellent. There were several days of warm weather, with occasional showers and hot sun, and cattle began to seek the shade.

The 23d was a day of hard rain, followed by fine weather on the 24th, and a cold south-easterly rain storm on the 25th.

During the remainder of the year, the weather continued fair and cool.

No rain fell during the first half of January, which we passed between Santa Barbara and

Los Angeles: the days were bright and very pleasant, with warm sun; and the nights, generally, cold. In the neglected orchards of the San Buenaventura and Fernando missions, the olive trees remained loaded with the abundant fruit, which continued in perfectly good condition.

About the 14th, a day of rain succeeded by an interval of fine weather, again interrupted by a rainy, disagreeable south-easter on the 23d. During the remainder of the month the days were bright and pleasant—almost of summer—sun and clouds varying; the nights clear, but sometimes a little cold; and much snow showing on the mountain overlooking the plains of San Gabriel.

In the first part of February, at Los Angeles, there were some foggy and misty mornings, with showers of rain at intervals of a week. The weather then remained for several weeks uninterrupted and beautifully serene, the sky remarkably pure, the air soft and grateful, and it was difficult to imagine any climate more delightful. In the mean time the processes of vegetation went on with singular rapidity, and, by the end of the month, the face of the country was beautiful with the great abundance of pasture, covered with a luxuriant growth of geranium, (*erodium cicutarium*), so esteemed as food for cattle and horses, and all grazing animals. The orange trees were crowded with flowers and fruit in various sizes; and along the foot of the mountain, bordering the San Gabriel plain, fields of orange-coloured flowers were visible at the distance of fifteen miles from Los Angeles.

In the midst of the bright weather there was occasionally a cold night. In the morning of March 9 new snow appeared on the San Gabriel mountain, and there was frost in the plain below; but these occasionally cold nights seemed to have no influence on vegetation.

On the 23d and 27th of March there were some continued and heavy showers of rain, about the last of the season in the southern country. In the latter part of April, fogs began to be very frequent, rising at midnight and continuing until 9 or 10 of the following morning. About the beginning of May the mornings were regularly foggy until near noon; the remainder of the day sunny, frequently accompanied with high wind.

The climate of maritime California is greatly modified by the structure of the country, and under this aspect may be considered in three divisions—the *southern*, below Point Concepcion and the Santa Barbara Mountain, about latitude 35°; the *northern*, from Cape Mendocino, latitude 41°, to the Oregon boundary; and the *middle*, including the bay and basin

of San Francisco and the coast between Point Concepcion and Cape Mendocino. Of these three divisions the rainy season is longest and heaviest in the north and lightest in the south. Vegetation is governed accordingly—coming with the rains—decaying where they fail. Summer and winter, in our sense of the terms, are not applicable to this part of the country. It is not heat and cold, but wet and dry, which mark the seasons; and the winter months, instead of killing vegetation, revive it. The dry season makes a period of consecutive drought, the only winter in the vegetation of this country, which can hardly be said at any time to cease. In forests, where the soil is sheltered; in low lands of streams and hilly country, where the ground remains moist, grass continues constantly green and flowers bloom in all the months of the year. In the southern half of the country the long summer drought has rendered irrigation necessary, and the experience of the missions, in their prosperous day, has shown that, in California, as elsewhere, the driest plains are made productive, and the heaviest crops produced by that mode of cultivation. With irrigation, a succession of crops may be produced throughout the year. Salubrity and a regulated mildness characterize the climate; there being no prevailing diseases, and the extremes of heat during the summer being checked by sea-breezes during the day, and by light airs from the Sierra Nevada during the night. The nights are generally cool and refreshing, as is the shade during the hottest day.

California, below the Sierra Nevada, is about the extent of Italy, geographically considered in all the extent of Italy from the Alps to the termination of the peninsula. It is of the same length, about the same breadth, consequently the same area, (about one hundred thousand square miles,) and presents much similarity of climate and productions. Like Italy, it lies north and south, and presents some differences of climate and productions, the effect of difference of latitude, proximity of high mountains, and configuration of the coast. Like Italy, it is a country of mountains and valleys: different from it in its internal structure, it is formed for *unity*; its large rivers being concentric, and its large valleys appurtenant to the great central bay of San Francisco, within the area of whose waters the dominating power must be found.

Geographically, the position of this California is one of the best in the world; lying on the coast of the Pacific, fronting Asia, on the line of an American road to Asia, and possessed of advantages to give full effect to its grand geographical position.

HAKLUYT'S VOYAGES.

Selected from Richard Hakluyt's Collection of the Voyages, Navigations, Traffiques and Discoveries of the English Nation. Imprinted at London by George Bishop, Ralfe Newberie and Robert Barker. Anno Dom. 1600.

THE course which Sir Francis Drake held from the haven of Guatulco in the South Sea on the backe side of Nueva Espanna, to the Northwest of California as far as fourtie three degrees: and his returne back along the said Coast to thirtie eight degrees: where finding a faire and goodly haven, he landed, and staying there many weekes, and discovering many excellent things in the country and great shewe of rich minerall matter, and being offered the dominion of the country by the Lord of the same, hee tooke possession thereof in the behalfe of her Maiestie and named it Noua Albion.

The fift day of June being in fortie three degrees towards the pole Articke being speedily come out of the extreame heate, we found the ayre so colde, that our men being pinched with the same, complained of the extremitie thereof, and the further we went, the more the colde increased upon us, whereupon we thought it best for that time to seeke land, and did so, finding it not mountainous, but low plaine land & we drew backe againe without landing, til we came within thirtie eight degrees towards the line. In which height it pleased God to send us into a faire and good Bay, with a good winde to enter the same.

In this Bay we ankered the seventeenth of June, and the people of the country, hauing their houses close by the waters side, shewed themselves unto us, and sent a present to our Generall.

When they came unto us, they greatly wondered at the things which we brought, but our Generall (according to his naturall and accustomed humanitie) courteously intreated them, and liberally bestowed on them necessarie things to couer their nakednesse, whereupon they supposed us to be gods, and would not be perswaded to the contrary: the presentes which they sent unto our Generall were feathers, and calis of net worke.

Their houses are digged round about with earth, and haue from the uttermost brimmes of the circle clefts of wood set upon them ioyning close together at the toppe like a spire steeple, which by reason of that closenesse are very warme.

Their bed is the ground with rushes strawed on it, and lying about the house, they haue the fire in the midst. The men goe naked, the women take bulrushes and kembe them after the maner of hempe, and thereof make their loose garments, which being knit about their

middles, hang downe about their hippes, hauing also about their shoulders a skinne of Deere, with the haire upon it. These women are very obedient and seruiceable to their husbands.

After they were departed from us, they came and visited us the second time, and brought with them feathers and bags of Tobacco for presents: And when they came to the toppe of the hil (at the bottome whereof wee had pitched our tents) they stayed themselves, where one appointed for speaker, wearied himselfe with making a long oration, which done, they left their howes upon the hill and came downe with their presents.

In the meantime the women remaining on the hill, tormented themselves lamentably, tearing their flesh from their cheekes, whereby we perceived that they were about a sacrifice. In the meane time our Generall, with his companie, went to prayer, and to reading of the Scriptures, at which exercise they were attentue and seemed greatly to be affected with it; but when they were come unto us they restored againe unto us those things which before we had bestowed upon them.

The newes of our being there being spread through the country, the people that inhabited round about came downe, and amongst them the King himself, a man of goodly stature, and comely personage, and many other tall and warlike men; before whose comming were sent two Ambassadors to our Generall, to signifie that their King was comming, in doing of which message, their speech was continued about halfe an houre. This ended, they by signes requested our Generall to send something by their hand to their king, as a token that his comming might bee in peace: wherein our Generall hauing satisfied them, they returned with glad tidings to their King, who marched to us with a princely Maiestie, the people crying continually after their maner, and as they drew neere unto us, so did they strive to behaue themselves in their actions with comelinesse.

In the fore front was a man of a goodly personage, who bore the scepter, a mace before the King, whereupon hanged two crownes, a lesse and a bigger, with three chaines of a marueilous length: the crownes were made of knit work wrought artificially with feathers of diuers colours: the chaines were made of a bony substance and few be the persons among them that are admitted to weare them: and of that

number also the persons are stinted, as some ten, some twelve, &c. Next unto him which bare the scepter was the King himselfe, with his Garde about his person, clad with Conie skinnes, and other skinnes: after them followed the naked common sort of people, every one having his face painted with white, some with blacke, and other colours, and having in their hands one thing or other for a present, not so much as their children, but they also brought their presents.

In the mean time, our Generall gathered his men together, and marched within his fenced place, making against their approaching, a very warlike shewe. They being trooped together in their order, and a general salutation being made, there was presently a generall silence. Then he that bare the scepter before the King, being informed by another, whome they assigned to that office, with a manley and loftie voice, proclaimed that which the other spake to him in secret, continuing halfe an houre; which ended, and a generall Amen as it were giuen, the King with the whole number of men, and women (the children excepted) came downe without any weapon, who descending to the foote of the hill, set themselves in order.

In coming towards our bulwarks and tents, the scepter bearer began a song, observing his measures in a dance, and that with a stately countenance, when the King with his Garde, and every degree of persons following, did in like manner sing and dance, saving onely the women which daunced and kept silence. The generall permitted them to enter within our bulwark, where they continued their song and daunce a reasonable time. When they had satisfied themselves, they made signes to our Generall to sit downe, to whom the King, and divers others made severall orations, or rather supplication, that he would take their province and kingdom into his hand, and become their King, making signes that they would resigne unto him their right and title of the whole land, and become his subjects. In which to perswade us the better, the King and the rest, with one consent and with great reuerence, ioyfully singing a song, did let the crowne upon his head, enriched his necke with all their chaines, and offered unto him many other things, honouring him by the name of Hioh, adding thereunto as it seemed a signe of triumph: which thing our Generall thought not meete to reiect, because hee knewe not what honour and profite it might be to our country. Wherefore in the name, and to the use of Maiestie he tooke the scepter, crowne and dignitie of the said country in his hands, wishing that the riches and treasure thereof might so conveniently be transported to the enriching of her kingdome at home as it aboundeth in the same.

The common sort of the people leauing the King and his Garde with our Generall, scattered themselves together with their sacrifices among our people, taking a diligent viewe of

every person; and such as pleased their fancie (which were the yongest) they inclosing them about offered their sacrifices unto them with lamentable weeping, scratching and tearing the flesh from their faces with their nayles: whereof issued abundance of blood.

But wee bied signes to them of disliking this, and stayed their hands from force, and directed them upwardes to the living God, whome onely they ought to worshippe. They shewed unto us their wounds, and craued helpe of them at our handes, whereupon wee gaue them lotions, plaisters, and ointments agreeing to the state of their griefes, beseeching God to cure their diseases. Every thirde day they brought their sacrifices unto us, untill they understoode our meaning, that we had no pleasure in them: yet they could not be long absent from us, but daily frequented our company to the houre of our departure, which departure seemed so grievous unto them, that their ioy was turned into sorrow. They intreated us, that being absent wee would remember them, and by stelh provided a sacrifice, which we misliked.

Our necessarie businesse being ended, our Generall with his companie traueiled up into the country to their villages, where we found heardees of Deere by a thousand in a companie, being most large and fat of body.

We found the whole country to bee a warren of a strange kinde of Conies, their bodyes in bignes as be the Barbary Conies, their heads as the heades of ours, the feet of a Maut, and the taile of a Rat being of great length: under her chinne on either side a bagge into the which shee gathereth her meate when she hath filled her belly abroad. The people eate their bodies, and make great account of their skinnes, for their King's coate was made of them.

Our Generall called this country, Noua Albion, and that for two causes, the one in respect of the white bankes and cliffes which ly towards the sea; and the other, because it might haue some affinitie with our country in name, which sometime was so called.

There is no part of earth here to bee taken up, wherein there is not some speciall likelihood of gold or silver.

At our departure hence our Generall set up a monument of our being there; as also of her Maiesties right and title to the same, namely a plate nailed upon a faire great poste, whereupon was ingrauen her Maiesties name, the day and yeere of our arriuall there, with the free giuing up of the Province and people into her Maiestie's hands, together with her highnes' picture and armes, in a piece of sixe pence of current English money under the plate, where under was also written the name of our Generall.

It seemeth that the Spaniards hitherto had neuer bene in this part of the country, neither did euer discover the land by many degrees to the Southwards of this place.

DESCRIPTION OF CALIFORNIA.

Extracts from "A Natural and Civil History of California, containing an Accurate Description of that Country, its Soil, Mountains, Harbours, Lakes, Rivers, and Seas; its Animals, Vegetables, Minerals, and famous Fishery for Pearls. The Customs of the Inhabitants. Their Religion, Government, and Manner of Living, before their Conversion to the Christian Religion by the Missionary Jesuits. Together with Accounts of the several Voyages and Attempts made for settling California, and taking actual Surveys of that Country, its Gulf, and Coast of the South Sea. Illustrated with Copper Plates, and an Accurate Map of the Country and the Adjacent Seas. Translated from the Original Spanish of Miguel Venegas, a Mexican Jesuit, published at Madrid, 1758. In two volumes. London: Printed for James Rivington and James Fletcher, at the Oxford Theatre, in Pater-Noster-Row, 1759."

THE country which we are going to describe, is distinguished in the maps by three different names: California, New Albion, and the Islas Carolinas: but the most ancient is that of California, being found in Bernal Dias del Castillo, an officer who served under the famous Cortez, in the conquest of Mexico, and who published a History of that astonishing Expedition. It must however be observed that the name California is, by this gentleman, limited to one single bay. It acquired the name of New Albion, from the famous English admiral Sir Francis Drake, who, in the year 1577, being then on his second voyage round the world, touched at this country. New Albion implies the same as New England, or New Britain; Albion being the ancient name of the island we now call England. The name Islas Carolinas was not given to this country till near a century after, in honour of Charles II. of Spain, when, by his order, the conquest of California, then thought an island, and the others adjacent, were undertaken with a force equal to the enterprise. This name is used by father Henry Scherera, a German Jesuit, in his new Atlas; by M. de Fer, in a small Atlas of the Spanish dominions, and which he presented to king Philip V. on his accession to the throne; and also by other geographers, in their atlases and particular maps. But that famous expedition being rendered abortive, the name has not generally prevailed.

The name by which this country is at present known, is that of California, an appellation given to it at its first discovery. Some use the name in the plural number, calling it the Californias, intending probably to include that part thought the principal island and the largest in the world, together with a multitude of lesser islands which surround it on all sides. But it being now known that this country is no island, but joined to the continent of America, as we shall presently show, propriety requires, that the word should be used only in the singular number, in conformity with the military historian above-mentioned.

I could wish to gratify the reader with the

etymology and true origin of a name which, from the oddness of its sound, the real misfortunes which the first discoverers met with in that country, and the great riches it is supposed to contain, has greatly excited the curiosity of the inhabitants both of New Spain and Europe. But in none of the various dialects of the natives could the missionaries find the least traces of such a name being given either to the country, or even to any harbour, bay, or small portion of it. Nor can I subscribe to the etymology of some writers, who suppose this name to have been given it by the Spaniards, on their feeling an unusual heat at their first landing here, and thence called the country California, a compound of the two Latin words calida fornax, a hot furnace. I believe few will think our adventurers could boast of so much literature; for though Del Castillo praises Cortez for his being not only a good humanist but also an excellent poet, and had taken the degree of bachelor of laws, we do not find that either he or his captains took this method in giving names to their conquests. I am therefore inclined to think that this name owed its origin to some accident: possibly to some words spoken by the Indians, and misunderstood by the Spaniards; as happened, according to a very learned American, in the naming of Peru; and also, as we shall shortly shew, in giving name to the nation of Guaycura.—Vol. i. p. 1—4.

The length of California, from Cape San Lucas to the northern limit already conquered, is about 300 leagues; besides which, about a district of a league has been partly known and described.

Its breadth is small in proportion to its length, for at Cape San Lucas it is only 10 leagues, in some places 20, in others 30, and in others*40, from one sea to the other, according to the windings of both coasts. From the extent of the country, there must naturally be a difference in the temperature of the air, and the qualities of the soil. But it may be said in general, that the air is dry and hot to a great degree, and that the earth is barren, rugged, wild, everywhere overrun with mountains,

rocks, and sands, with little water, and consequently unfiteither for agriculture, planting, or graziery. But to speak a little more particularly; for the space of 20 or 30 leagues from Cape San Lucas, the air is of a more kindly quality, the ground less barren and rugged, and little currents of water more frequent than in the other parts. From hence to the garrison of Loretto, which is near the centre of the conquered part, the heat is in general excessive, the mountains craggy, and the earth dry and barren. In the remaining part of the conquered country to the furthest missions the air is more moderate, so that at some seasons of the year water freezes; but the wild disposition of the country is the same. From the 28th degree, as far as has been discovered along the coast of the peninsula, the soil is not so rugged and full of rocks: yet with no abatement of its remarkable sterility. Father Kino however, who crossed the River Colorado, between 34 and 35 degrees, and took a very careful survey of the countries to the west of this river, betwixt the channel of Santa Barbara, Puerto de Monte Rey, and Cape Mendocino, assures us, that there are level and fruitful tracts, interspersed with many delightful woods, plenty of water, fine pastures, and as proper a country for making settlements as can be desired. This account is confirmed by what General Vizcaino met with on the sea-coast of those tracts; and still more recently by Father Taraval's own experience on the coast of San Xavier, and in the opposite islands de los Dolores, which form the above named channel of St. Barbara. Both agree that these coasts, either with regard to the air, or plenty of fruits, have little or no affinity with other parts of California.—Vol. i. p. 26—28.

Father Torquemada observes, that about Monte Rey are very large bears, an animal something like a buffalo, and a creature very different from the tiger, as will appear from the following description he has given of it: it is about the bigness of a steer, but shaped like a stag; its hair resembles that of a pelican, and is a quarter of a yard in length; its neck long, and on its head are horns, like those of a stag; the tail is a yard in length, and half a yard in breadth, and the feet cloven like those of an ox.—Vol. i. p. 37—38.

It is also proper to observe, that in the countries not hitherto reduced, lying between the River Colorado and the coasts of Monte Rey to Cape Mendocino, both the fathers Kino and Juan de Torquemada relate that there is a great number of large trees, holms, pines, and black and white poplars.

We have not hitherto had any particular account of its minerals; but some intelligent

persons are of opinion, that the Sierra Pintada and other parts abound with metals, as they exhibit all the marks and appearances of gold and silver mines. Capt. Woods Rogers says, that some of his men saw on the coast of California several heavy, glittering, shining stones, which they imagined to contain some valuable metal; but it was then too late to search for them, or even to carry them on board for a further examination. It is indeed natural to suppose, that there are very many rich mines in California, as the opposite coast in the provinces of Sonora and Pimeria are known to abound with them; for in the year 1730 a vein was discovered on an eminence, not far from the garrison of Pimeria, the ore of which, with a little labour, yielded so large a quantity of silver as surprised the inhabitants of New Spain; and it remained some time a question whether it was a mine, or treasures hid by the Indians. Some have also been discovered which contain veins of other metals: rock salt is also found here, of a whiteness equal to crystal, and samples of it have been carried to Mexico.

But if the soil of California be in general barren, the scarcity of provisions is supplied by the adjacent sea; for both in the Pacific Ocean and the Gulf of California, the multitude of fishes and their variety are incredible. Father Antonio de la Ascencion, speaking of the Bay of San Lucas, says, "With the nets which every ship carried, they caught a great quantity of fish of different kinds, and all wholesome and palatable; particularly hollybuss, salmon, turbot, skates, pilchards, large oysters, thornbacks, mackerel, barbels, bonetas, soals, lobsters, and pearl oysters." And speaking of the Bay of San Francisco, on the western coast, he adds: "Here are such multitudes of fish, that with a net, which the commodore had on board, more was caught every day than the ship's company could make use of: and of these a great variety, as crabs, oysters, breams, mackerel, cod, barbels, thornbacks, &c." And in other parts he makes mention of the infinite number of sardines, which are left on the sand at the ebb, and so exquisite that those of Loreda in Spain, then famous for this fish, do not exceed them. Nor are fish less plentiful along the gulf, where to the above-named species Father Piccolo adds tunnies, anchovies, and others. Even in the little rivulets of this peninsula are found barbels, and cray-fish: but the most distinguished fish of both seas are the whales; which induced the ancient cosmographers to call California, Punta de Balenas, or Cape Whale: and these fish being found in multitudes along both coasts, give name to a channel in the gulf, and a bay in the South Sea.—Vol. i. p. 37—48.

MONTEREY AND VICINITY.

Extracts from "*A Voyage round the World, in the years 1785, 1786, 1787, and 1788. By J. F. G. De la Perouse. Published conformably to the Decree of the National Assembly, of the 22d of April, 1791, and Edited by M. L. A. Millet-Mureau, Brigadier General in the Corps of Engineers, Director of Fortifications, Ex-Constituent, and Member of several Literary Societies at Paris. In Three Volumes. Translated from the French. Second Edition. London: Printed for J. Johnson, St. Paul's Church Yard, 1799.*"

MONTEREY Bay, formed by New Year Point to the north, and by that of Cyprus to the south, has an opening of eight leagues in this direction, and nearly six of depth to the eastward, where the land is sandy and low. The sea breaks there as far as the foot of the sandy downs with which the coast is surrounded, with a roaring which we heard more than a league off. The lands north and south of this bay are high, and covered with trees; those ships which are desirous of touching there ought to follow the south coast, and after having doubled the Point of Pines, which stretches to the northward, they get sight of the presidency, and they may come to an anchor in ten fathoms within it, and a little within the land of this point, which shelters from the winds from the offing. The Spanish ships which propose to make a long stay at Monterey are accustomed to bring up within one or two cable's lengths of the land, in six fathoms, and make fast to an anchor which they bury in the sand of the beach; they have then nothing to fear from the southerly winds, which are sometimes very strong, but as they blow from the coast, do not expose them to any danger. We found bottom over the whole bay; and anchored four leagues from the land, in sixty fathoms, soft muddy ground; but there is a very heavy sea, and it is only an anchorage fit for a few hours, in waiting for day, or the clearing up of the fog. At full and change of the moon it is high water at half past one o'clock; the tide rises seven feet, and as this bay is very open, the current in it is nearly imperceptible; I never saw it run more than half a knot. It is impossible to conceive the number of whales with which we were surrounded, or their familiarity; they every half minute spouted within half a pistol-shot of our ships, and made a prodigious stench in the air. We were ignorant of this property in whales, but were informed by the inhabitants, that the water which they flung out, and which they scattered to a great distance, was impregnated with that offensive smell; this phenomenon to us would probably have been none at all to the fisherman of Greenland or Nantucket.

The coasts of Monterey Bay are almost continually enveloped in fogs, which cause great difficulty in the approach to them. But for this circumstance there would be few more

easy to land upon; there is not any rock concealed under water that extends a cable's length from the shore, and if the fog be too thick, there is the resource of coming to an anchor, and there waiting for a clear, which will enable you to get a good sight of the Spanish settlements situate in the angle formed by the south and east coasts.

The sea was covered with pelicans. These birds, it seems, never go farther than five or six leagues from the land, and navigators, who shall hereafter meet with them during a fog, may rest assured that they are within that distance of it. The first time we saw any of them was in Monterey Bay, and I have since learned, that they are very common over the whole coast of California; the Spaniards call them *alkatræ*.—Vol. ii. p. 194—196.

Before the Spanish settlements, the Indians of California cultivated nothing but maize, and almost entirely lived by fishing and hunting. There is not any country in the world which more abounds in fish and game of every description: hares, rabbits, and stags are very common there; seals and otters are also found there in prodigious numbers; but to the northward, and during the winter, they kill a very great number of bears, foxes, wolves, and wild cats. The thickets and plains abound with small gray, tufted partridges, which like those in Europe live in society, but in large companies of three or four hundred; they are fat and extremely well flavoured. The trees serve as habitations to the most delightful birds; our ornithologists stuffed a great variety of sparrows, titmice, speckled wood-peckers, and tropic birds. Among the birds of prey are found the white-headed eagle, the great and small falcon, the goss-hawk, the sparrow-hawk, the black vulture, the large owl, and the raven. On the ponds and sea-shore are seen the wild duck, the gray and white pelican with yellow tufts, different species of gulls, cormorants, curlews, ring-plovers, small sea water-hens, and herons. We also killed and stuffed a bee-eater, which, according to most ornithologists, is peculiar to the old continent.

This land possesses also an inexpressible fertility; farinaceous roots and seeds of all kinds abundantly prosper there; we enriched the missionaries' and governor's garden with

different grains and seeds which we brought from Paris; they were in a high state of preservation, and will procure them new enjoyments.

The crops of maize, barley, and corn, and pease, cannot be equalled but by those of Chili; our European cultivators can have no conception of a similar fertility; the medium produce of corn is from seventy to eighty for one; the extremes sixty and a hundred. Fruit trees are still very rare there, but the climate is extremely suitable to them; it differs a little from that of our southern French provinces, at least the cold is never so piercing there; but the heats of the summer are there much more moderate, owing to the continual fogs which reign in these countries, and which procure for the land a humidity very favourable to vegetation.

The forest trees are the stone-pine, cyprus, evergreen oak, and occidental plane tree; there is no underwood, and a verdant carpet, over which it is very agreeable to walk, covers the ground. There are also vast savannas, abounding with all sorts of game. The land, though very well adapted to vegetation, is light and sandy, and is indebted, I believe, for its fertility, to the humidity of the air, for it is very indifferently watered. The nearest running stream to the presidency is two leagues distant; this rivulet, which runs near to the mission of Saint Charles, is called by the old navigators *Carmel River*. The too great distance from our ships prevented us from watering there; we drew water from pools behind the fort, where its quality was very indifferent, scarcely dissolving soap. The river Carmel, which affords an agreeable and wholesome drink to the missionaries and their Indians, might with a very little labour water their gardens also.—P. 202—204.

Our botanists, on their part, lost not a moment towards increasing the collection of plants, but the season was very unfavourable,

the summer's heat had entirely dried them up, and their seeds were scattered over the earth. Those which M. Collignon, our gardener, could recollect, were the common wormwood, the sea wormwood, southernwood, mugwort, the Mexican tea, the golden rod of Canada, the Italian starwort, milfoil, deadly nightshade, spurry, and water-mint. The gardens of the governor and the mission were filled with an infinite number of pot-herbs, which were gathered for us, and our ships' companies had not in any country met with so great a quantity of pulse.

Our mineralogists were not less zealous than the botanists, but they were still less fortunate; they met upon the mountains, in ravines, and on the sea-shore, only a light and argillaceous stone, very easily decomposed, and which is a species of marl; they also found blocks of granite, the veins of which concealed crystallized feldspar, some rounded fragments of porphyry and jasper, but no trace of metal. Shells are not more abundant there, with the exception of superb halioles; they are even nine inches in length by four in breadth; all the rest are not worth the trouble it would take to collect them.—P. 233—234.

The land in the neighbourhood of Monterey, though dry, appears capable of being cultivated to great advantage, of which we had proofs in the goodness and abundance of European vegetables which are raised there. Butchers' meat is also of an excellent quality. It is therefore certain that from the convenience of the harbour, if this settlement should ever become flourishing, it would prove as good a place of refreshment as any in the world for European vessels; but it will be time enough to enter upon political speculations with regard to the harbours, when the Europeans established on the north-east of this continent shall have extended their settlements to the north-west coast; an event that is not likely to be very soon accomplished.—Vol. iii. p. 267.

Extract from the Navigantium Bibliotheca, by Harris. London, 1744. 2 vols. folio.

SPEAKING of Sir Francis Drake's discovery of New Albion, he says:—"The discovery, as I conceive, consisted chiefly in his marching up into the country, which before that time, it is probable, the Spaniards had never done; and with respect to our title to the country, I conceive it to arise from the good-will and voluntary submission of the people, facts as well proved as in the nature of things we can expect, and which certainly give us as good (if not a better) claim to New Albion, as the Spaniards can show for any part of their possessions.

"The country too, if we might depend upon what Sir Francis Drake, or his chaplain, says, may appear worth the seeking and keeping, since they assert that the land is so rich in GOLD and SILVER, that upon the slightest

turning it up with a spade or pick-axe, those rich metals plainly appear mixed with the mould. It may be objected that this looks a little fabulous; but to this two satisfactory answers may be given; the first is, that later discoveries on the same coast confirm the truth of it, which, for any thing I can see, ought to put the fact out of the question; but if any doubts should remain, my second answer will overturn these. For I say next, that the country of New Mexico lies directly behind New Albion, on the other side of a narrow bay, and in that country are the mines of Santa Fe, which are allowed to be the richest silver mines of North America: here then is a valuable country, to which we have a very fair title.—Vol. ii. p. 179.

SAN FRANCISCO.

Extracts from "Voyages and Travels in Various Parts of the World, during the Years 1803, 1804, 1805, 1806, and 1807. By G. H. Von Langsdorff, Aulic Counsellor to His Majesty the Emperor of Russia, Consul-General at the Brazils, Knight of the Order of St. Anne, and Member of Various Academies and Learned Societies. Carlisle, Pa.: Printed by George Phillips, 1817."

THESE important matters concluded, we were conducted to the kitchen garden, which did not answer my expectations. There was nothing in it but some sorts of pulse and culinary vegetables, with a few stunted fruit-trees, which scarcely bore any fruit, and most of the beds were overgrown with weeds. The northwest winds, which prevail so much on this coast; and the dry sandy nature of the soil, are insurmountable obstacles to horticulture. The only things that grow well in the garden are asparagus, cabbages, several sorts of salad, onions, and potatoes. In some fields, tolerably sheltered from the wind, pease, beans, Turkish corn, and other pulse are cultivated, and thrive pretty well. Corn is here less productive than in some other parts of New California; notwithstanding this, the Spanish government thought it expedient to establish a mission in the neighbourhood of so excellent a harbour as that of St. Francisco, with a presidency for its protection. It is certainly justified, since both establishments are in a flourishing condition, principally from the great number of cattle they are enabled to breed.—Pp. 436, 437.

We often amused ourselves with shooting the crested partridges and the rabbits which abound upon the sand-hills near the shore. One day we went, accompanied by twelve people, and conducted by thirty or forty Indians, to catch hares and rabbits by a sort of snaring, when, in three hours, without firing a shot, we had taken seventy-five, and most of them alive. We sought in vain several times for lions, tigers, and bears; of the latter there had been formerly a great abundance, but they were now become much more rare. On the northern shore of the bay the roe abounds, and the chase of it is very amusing and productive. In a number of aquatic excursions, I found most of the birds with which I had become familiar at Sitcha, as pelicans, guillemots, ducks, particularly the *anas perspicillata*, and the *anas nigra*, sea-pies, and others. There were also seals of various sorts, and above all things, the valuable sea-otter was swimming in numbers about the bay, nearly unheeded.—P. 453.

Whales are very often cast on shore in these parts, particularly in the bay of Monterey. Sea-dogs and sea-otters are taken in nets, though in very small numbers. The American lion, *felis concolor*, the American tiger, *felis*

onca, stags, roes, wolves, foxes, bears, and pole-cats, *viverra zibetia*, are very common here; the latter is called by the Spaniards, *sorillo*. The urine which this animal spurts from him to defend himself against his enemies, exceeds in stench every thing that can be conceived; the missionaries told me that in the night it is exceeding phosphoric, and if put into a glass retains the phosphoric appearance for a very long time.

Among the feathered species, I observed the *vultur aura*. The feet of this bird are very different from those of any other; the claws are thin and small, and the three foremost are united by a sort of half web, so that to judge by the feet, it seems to belong to the class of marsh-birds, but according to the bill, it should belong to birds of prey. I was told that a soup made of the flesh of this bird is extremely wholesome, and that by taking it freely, all diseases of the body have a tendency to throw themselves out upon the skin. Perhaps the flesh itself has rather a propensity to creating eruptions of the skin, as it is well known that in some persons strawberries will have that effect, though others eat them in abundance without any effect whatever. These vultures are gregarious; they are slow of flight, and feed upon carrion, which, in company with the ravens, with whom they live upon very friendly terms, they devour in great quantities.

The *orioles phanicus* flies about the houses here like sparrows in Europe. The *orioles icterus*, *alandia calandra*, *picus auratus*, *telix cristatus*, *trochilus mosquitus*, and others of this species, are also very abundant. Of the *colibris* there are a great number in summer, but not one is to be seen in winter. It is universally said here that they remain in a torpid state all the winter, whence they have the name of *saxaro resuscitado*, resurrection birds. Of water and marsh birds there are a great variety, particularly of the *ardea*, *tringa*, *scolopax*, *pelicanus*, *larus*, *colymbus*, *mergas*, and *anas* species. In winter, the number of wild geese in the boggy plain to the southeast of the bay is so great that they are a positive nuisance—they do great injury to the young corn, which stands the winter, and are so impudent that they are scarcely to be frightened away by firing among them. *Raya aquila*, and a species of *acipenser*, were the only fish that fell under my observation.—P. 480—481.

NEW CALIFORNIA.

Extracts from "The Geographical and Historical Dictionary of America and the West Indies, containing an Entire Translation of the Spanish Work of Colonel Don Antonio De Alcedo, Captain of the Royal Spanish Guards, and Member of the Royal Academy of History. By G. A. Thompson, Esq. London, 1812."

THE part of the coast of the great ocean which extends from the Isthmus of old California, or from the Bay of Todos los Santos (south from the port of San Diego) to Cape Mendocino, bears on the Spanish maps the name of New California. No village or farm is to be found north of the port of St. Francis, which is more than 78 leagues distant from Cape Mendocino. The province of New California in its present state is only 197 leagues in length, and from nine to ten in breadth. The city of Mexico is the same distance in a straight line from Philadelphia as from Monterey, which is the chief place of the missions of New California, and of which the latitude is the same within a few minutes with that of Cadiz. At the time of the expedition of M. Galvez, military detachments came from Loreto to the port of San Diego. The letter-post still goes from this port along the northwest coast to San Francisco. This last establishment, the most north of all the Spanish possessions of the new continent, is almost under the same parallel with the small town of Taos, in New Mexico. It is not more than 300 leagues distant from it; and though Father Escalante, in his apostolical excursions in 1777, advanced along the west bank of the river Zaguano towards the mountains De los Guaceros, no traveller has yet come from New Mexico to the coast of New California.

From the example of the English maps, several geographers give the name of New Albion to New California. This denomination is founded on the inaccurate opinion of the navigator Drake, who first discovered, in 1578, the northwest coast of America, between the 38° and the 48° of latitude. The celebrated voyage of Sebastian Viscaino is no doubt 24 years posterior to the discoveries of Francis Drake; but Knox and other historians seem to forget that Cabrillo had already examined, in 1542, the coast of New California to the parallel of 43°, the boundary of his navigations, as we may see from a comparison of the old observations of latitude with those taken in our own days. Although the whole shore of New California was carefully examined by the great navigator, Sebastian Viscaino, (as is proved by plans drawn up by himself in 1602,) this fine country was only, however, occupied by the Spaniards 167 years afterwards. The court of Madrid, dreading lest the other maritime powers of Europe should form settle-

ments on the northwest coast of America, which might become dangerous to the Spanish colonies, gave orders to the Chevalier de Croix, the viceroy, and the Visitador Galvez, to found missions and *presidios* in the ports of San Diego and Monterey. For this purpose two packet-boats set out from the port of San Blas, and anchored at San Diego in the month of April, 1763.

The soil of New California is as well watered and fertile as that of Old California is arid and stony. It is one of the most picturesque countries which can be seen. The climate is much more mild there than in the same latitude on the east coast of the new continent. The sky is foggy, but the frequent fogs, which render it difficult to land on the coast of Monterey and San Francisco, give vigour to vegetation, and fertilize the soil, which is covered with a black and spongy earth. In the eighteen missions which now exist in New California, wheat, maize, and haricots (*frisoles*) are cultivated in abundance. Barley, beans, lentils, *garbanzos*, grow very well in the fields in the greatest part of the province. Good wine is made in the villages of San Diego, San Juan Capistrano, San Gabriel, San Buenaventura, Santa Barbara, San Luis Obispo, Santa Clara, and San Jose, and all along the coast, south and north of Monterey, to beyond the 37° of latitude. The European olive is successfully cultivated near the canal of Santa Barbara, especially near San Diego, where an oil is made as good as that of the valley of Mexico, or the oils of Andalusia.

The population of New California, including only the Indians attached to the soil who have begun to cultivate their fields, was,

In 1790 - - - 7,748 souls.

In 1801 - - - 13,668

And in 1802 - - - 15,562

Thus the number of inhabitants has doubled in 12 years. Since the foundation of these missions, or between 1769 and 1802, there were in all, according to the parish registers, 33,717 baptisms, 8009 marriages, and 16,984 deaths. We must not attempt to deduce from these data the proportion between the births and deaths, because in the number of baptisms the adult Indians (*los neofitos*) are confounded with the children. The estimation of the produce of the soil, or the harvests, furnishes also the most convincing proofs of the increase of industry and prosperity of New California.

In 1791, according to the tables published by M. Galiano, the Indians sowed in the whole province only 874 bushels of wheat, which yielded a harvest of 15,197 bushels. The cultivation doubled in 1802; for the quantity of wheat sown was 2089 bushels, and the harvest 33,576 bushels.

The following table contains the number of live stock in 1802.

Oxen.	Sheep.	Hogs.	Horses.	Mules.
67,782	107,172	1,040	2,187	877

In 1791, there were only 24,958 head of black cattle (*ganado mayor*) in the whole of the Indian villages. The north part of California is inhabited by the two nations of the Rumsen and Escalen. They speak languages totally different from one another, and they form the population of the *presidio* and the village of Monterey. In the bay of San Francisco, the languages of the different tribes of the Matalans, Salsen, and Quirotes, are derived from a common root. Father Lasuen observed, that on an extent of 180 leagues of the coast of California, from San Diego to San Francisco, no fewer than seventeen languages are spoken, which can hardly be considered as dialects of a small number of mother languages. The population of New California would have augmented still more rapidly if the laws by which the Spanish *presidios* have been governed for ages were not directly opposite to the true interests of both mother country and colonies. By these laws the soldiers stationed at Monterey are not permitted to live out of their barracks and to settle as colonists. The Indians who inhabit the villages of New California have been for some years employed in spinning coarse woollen stuffs, called *fresadas*; but their principal occupation, of which the produce might become a very considerable branch in commerce, is the dressing of stag-skins. In the *cordillera* of small elevation which runs along the coast, as well as in the neighbouring *savannas*, there are neither buffaloes nor elks; and on the west of the mountains, which are covered with snow in the month of November, the *berrendos*, with small chamois horns, feed by themselves. But all the forest and all the plains covered with *gramineæ*, are filled with flocks of stags of a most gigantic size, the horns of which are round and extremely large. Forty or fifty of them are frequently seen at a time: they are of a brown colour, smooth, and without spot. Their horns, which are not palmated, are nearly 15 decimeters ($4\frac{1}{2}$ feet) in length. It is affirmed by every traveller, that this great stag of New California is one of the most beautiful animals of Spanish America. It probably differs from the *wewakish* of M. Hearne, or the *elk* of the United States, of which naturalists have very improperly made the two species of *Cervus Canadensis* and *cervus strongyloceros*. The horns of these stags are said to be nine feet long, and the animal, when running, throws up its head, to rest them on its back.

The Spanish and Russian establishments being hitherto the only ones which exist on the north-west coast of America, it may not be useless here to enumerate all the missions of New California which have been founded up to 1803. This detail is more interesting at this period than ever, as the United States have shown a desire to advance towards the west, towards the shores of the great ocean, which, opposite to China, abounds with beautiful furs of sea-otters.

The missions of New California run from south to north in the order here indicated:

San Diego, a village founded in 1769, 15 leagues distant from the most north mission of Old California. Population in 1802, 1560.

San Luis Rey de Francia, a village founded in 1798, 600.

San Juan Capistrano, a village founded in 1776, 1000.

San Gabriel, a village founded in 1771, 1050.

San Fernando, a village founded in 1797, 600.

San Buenaventura, a village founded in 1782, 950.

Santa Barbara, a village founded in 1786, 1100.

La Purissima Concepcion, a village founded in 1781, 1000.

San Luis Obispo, a village founded in 1772, 700.

San Miguel, a village founded in 1797, 600.

Soledad, a village founded in 1791, 570.

San Antonio de Padua, a village founded in 1771, 1050.

San Carlos de Monterey, capital of New California, founded in 1770.

San Juan Bautista, a village founded in 1797, 960.

Santa Cruz, a village founded in 1794, 440.

Santa Clara, a village founded in 1777, 1300.

San Jose, a village founded in 1797, 630.

San Francisco, a village founded in 1776, with a fine port. This port is frequently confounded by geographers with the port of Drake, further north, under the $38^{\circ} 10'$ of latitude, called by the Spaniards the Puerto de Bodega. Population of San Francisco, 820.

The number of whites, *mustees*, and mulattoes, who live in New California, either in the *presidios*, or in the service of the monks of St. Francis, may be about 1300; for in the two years 1801 and 1802, there were in the east of whites and mixed blood 35 marriages, 182 baptisms, and 82 deaths. It is only on this part of the population that the government can reckon for the defence of the coast, in case of any military attack by the maritime powers of Europe. The population of the intendancy of New California was, in 1803, 15,600. The extent of surface in square leagues, 2125; the inhabitants being seven to each league.—Pp. 246—248.

HASTINGS ON CALIFORNIA.

Extracts from Lansford W. Hastings' Guide to Oregon and California. Cincinnati, 1845.

HAVING given this brief description of the mountains, I will next notice the various rivers, the most important of which is the Colorado of the west, or Red River. This great river is to California what the Columbia is to Oregon, the Mississippi to the United States, or the Amazon to South America. It rises near latitude 43° north, its head waters interlocking with those of the Platte; its general course is about south-south-west, to its embouging, at the Gulf of California, near latitude 32° north. Following its meanders, its length is about twelve hundred miles, about two-thirds of which distance its course is very serpentine, and much interrupted by innumerable rapids, cascades, and deep chasms or channels. Its vast torrents of water, rushing and lashing over the former, foaming and dashing through the latter, make the very welkin ring, sending their misty spray in volumes to the clouds. As might be expected, these repeated interruptions almost entirely destroy its navigation for about eight hundred miles. The remainder of its distance is much less interrupted, but its navigation is also here seriously interrupted, with the exception of about one hundred miles from its mouth, which are without interruption, and which are navigable for vessels of two hundred tons burden. The greater portion of this river, from its source, lies through a very broken, mountainous country, breaking through lofty mountains, pouring over high cliffs, down vast perpendicular cataracts, and into deep chasms, with perpendicular basaltic walls, five hundred feet in height. The latter part of its distance, for four or five hundred miles, is through alternate rolling hills, undulating plains, and beautiful valleys and prairies. All the different tributaries of the northern portion of this river water an extremely mountainous, sterile, and entirely worthless region, with the exception of the limited, though numerous valleys, which are interspersed among the mountains. But the various tributaries of the southern portion of this river water many extensive plains, beautiful prairies, and fertile valleys. Its tributaries from the north, in the southern part, interlock with those of the Sacramento, and they water much the most extensive and fertile regions. The Colorado and its tributaries water much of the northern portion, most of the southern, and all the eastern portion of Upper California. The tide sets up this river about one hundred miles, the extent to which it is navigable, and very much aids its navigation

to that extent. Many portions of this river, its entire extent, will be found to be navigable for short distances, and although it will require repeated, and in many places, extensive portages, yet it will be found serviceable, for purposes of navigation, in all the different portions of the country through which it passes.—P. 72, 73.

The bays and harbours next claim our attention, and that deserving of the first and principal notice, is the Bay of St. Francisco, which is situated at latitude 38° north, and extends about forty miles into the interior, in a direction about north-north-east from its entrance. Its waters are securely confined within its bed, by an iron-bound coast, which is generally composed of solid basaltic rock. The country adjacent to this bay is a very broken and hilly region, but very fertile, producing oats, clover, and the like, with much profusion. The entrance of this bay, from the Pacific, is about one mile wide, upon each side of which is a high ledge of basaltic rock, about two hundred feet above the surface of the water. From these points, on each side of the entrance, the bay gradually expands, to eight or ten miles in extent, from north to south, and about twelve miles from east to west. At the extreme eastern portion of this bay, thus formed, its hilly and rocky banks gradually contract, so as to leave a space, only of about two miles, between the rocky, hilly shores, which thus forms a second entrance into another bay, of greater extent than that just described. At this entrance, the high, rolling, basaltic banks again gradually diverge, about ten miles, when they again contract, leaving a space of about one mile between them, which is about eight miles from the entrance last mentioned, and thus another spacious bay is formed. A third and more extensive bay is formed in a similar manner, the eastern extremity of which is about forty miles eastward from the coast, where it receives the Sacramento. The bay last alluded to, is twelve miles in extent, from east to west, and about fifteen from north to south, and, like the others described, it affords the most extensive and secure anchorage. From this description of the great Bay of St. Francisco, it is seen, that instead of one bay, there are three vastly extensive bays, which, however, are all connected, forming the Bay of St. Francisco. There are several small islands in this bay, the largest of which is situated on the north side of the first bay, within full view of the entrance, from the ocean. It is about five miles long, and

three in width, and has a very rough and broken surface, which is covered here and there with timber, of a small growth, and an abundance of vegetation. It is admirably suited to the purposes of grazing, as it not only produces the various grasses, and oats and clover, in great profusion, but also a great abundance of good fresh water. Large herds of fine cattle are now kept upon it, by a Spaniard, who resides in the lower part of the country.

The next large island alluded to, is located on the south side of the same bay, fronting the town of Yerba Buena. It is also depastured, but by herds of wild goats, which have been placed upon it by a foreigner who resides at Yerba Buena. Besides these islands, there are several others in this bay, which appear to be composed entirely of basaltic rock, and hence produce no kind of vegetation, but are places of resort for the innumerable fowls of prey, which abound in that region. One of these rocky islands is situated directly in front of the entrance, from the ocean, and is about one-fourth of a mile in diameter. The contiguity of this island to the entrance, and its immediate opposition to that point, render it very important, as a few guns planted upon it, and well manned, would, with all ease, perfectly command the entrance. But facilities for commanding this entrance are not wanting, for a few guns upon either side of it would sink a whole fleet that should attempt a hostile ingress. Outside of this bay, also, and within a few miles of the entrance, is another vast rocky island, rearing its ancient and majestic head, several hundred feet above the lashing surf and roaring billows below, as if designed by nature to point out the entrance, into that great bay of bays. A more admirable and advantageous position for a light-house can scarcely be conceived of, and there is but little doubt, that those who visit St. Francisco, two years hence, instead of seeing a massive, dark rock, looking out upon the mighty deep, at the mouth of that bay, will there behold a brilliant luminary of the ocean. From what has already been said, it must be apparent to all that there are few bays, if any, in any part of the world which surpass this, for security of harbour and extent of anchorage. It has been well said, that "in this bay all the fleets and navies of the whole world could ride in perfect safety." This bay alone would answer all the commercial purposes of California in all time to come. There is ample water at the entrance for vessels of the largest class, whether during the ebb or flow of the tide, which in this bay rises about eighteen feet perpendicular. All things being considered, I am of the opinion that a harbour cannot be found equal in all respects to that of the Bay of St. Francisco. It is of the greatest importance, not only to California, but also to all commercial governments of the world whose ships of war, merchant ships, or whalers, cruise in the Pacific, as it affords them the most extensive anchorage and secure harbour, which are surrounded by one of the most fertile coun-

tries in the known world, where all necessary ship supplies may be obtained, in any abundance, and upon the most favourable terms.

The Bay of Monterey is the next in importance, but its chief importance is derived from its central and otherwise peculiarly advantageous position, and not from its extent of anchorage or security of harbour. It is situated at latitude 37° north, and is about twenty miles in extent, and semicircular in form, affording tolerably extensive anchorage and secure harbour against all winds, excepting those from the west and north-east, which drive almost directly into the bay, rendering the harbour very insecure as against those winds. As an evidence of this fact, a vessel was stranded there a few years since, and the wreck now lies upon the beach, within a few hundred yards of the ordinary anchorage. I was informed that the captain of this vessel, finding a wreck inevitable, headed directly upon the beach, under full sail, which, of course, had a tendency to decide the matter as to a wreck, as well as to produce some rather unpleasant concussions. In this bay, as in St. Francisco, the tide rises about eighteen feet, and there is also ample water at the entrance of this bay, as at that, for the reception of vessels of any class, either during the ebb or flow of the tide. The entrance is also very easily commanded, but it is by no means as advantageously situated in that respect as that of the Bay of St. Francisco. It is the opinion, however, of many that the entrance of this bay can be as effectually fortified as that of any other, with the appropriate expense. The chief importance attached to this bay is derived from the fact of its being contiguous to the seat of government, which will undoubtedly be the case until there shall be some enlargement of the state, either upon the north or the south. The Bay of St. Diego is also a bay of very considerable extent, which is situated near latitude 33° north, affording very commodious and safe anchorage. It is about twenty miles in extent, from its entrance to its extreme eastern portion, and it affords extensive anchorage and safe harbour against all winds, excepting those blowing from the south and the south-west. This bay is also vastly important, from its local position, being in the extreme southern portion of the country; for without it, all that part of the country would be entirely excluded from all commercial advantages. Besides the principal bays here described, there are several others, which, however, are of much less importance, though perhaps of sufficient importance to require a brief notice. Of these there are but two which I shall notice, the one of which is situated in the extreme northern, and the other in the extreme southern portion of the country; the former is called Bodaga, and the latter Colorado. Bodaga is near latitude 40° north, and is about twelve miles in extent, but the entrance is rather difficult, and the anchorage unsafe, and at times dangerous in the extreme. This bay, however, together with the harbour formed at the mouth of the Klamet

River, before described, will afford ample commercial facilities for the extreme northern portion. The Colorado is situated at the mouth of the Colorado of the west, near latitude 32° north; it is very spacious, affording extensive and secure anchorage for ships of any class, sheltering them perfectly against all winds excepting those which blow directly from the south. This gives a brief view of the facilities for extensive commerce in Upper California, which are seldom if ever surpassed.—Pp. 78—80.

The soil is extremely varied, not only in the two sections, but also in the different portions of each section; the hills and mountains being entirely sterile, and valleys and plains extremely fertile. That of the valleys is vastly rich and productive; so much so, in fact, that I think I venture nothing when I say that it is not only unsurpassed, but that it is not even equalled. The deep, rich, alluvial soil of the Nile, in Egypt, does not afford a parallel. Remarks like these, I am aware, are apt to be considered as mere gratuitous assumptions; but to ascertain how far they are sustained by fact, the reader is referred to the sequel, especially that part of it which treats of the productions, which it is believed will not only convince him of their truth, but may perhaps induce him to indulge in assumptions and speculations even more enlarged. The soil of the various valleys of the western section varies from a rich alluvial to a deep black vegetable loam, upon strata of sand, gravel, clay or trap rock. That of the plains is principally a deep brown vegetable loam, or decomposed basalt, with a substratum of stiff clay or gravel and sand. And that of the hills is chiefly a brown sandy loam, or a loose gravelly soil. The mountains and most of the more elevated hills are generally entirely barren, and consist principally of primitive rocks, such as talcose slate, and other argillaceous stone, with hornblend and granite. The less elevated hills consist chiefly of basalt, slate and marble. Gypsum and a kind of white clay are also found in many places; the latter of which is very abundant, and which is used extensively by the inhabitants for the purpose of white-washing their dwelling-houses, both externally and internally. It is also used for the purpose of cleansing, as a substitute for soap, and for this purpose it is found to be most admirably adapted. It may be estimated that about two-thirds of all the western section are cultivable lands, and that three-fourths of it, including the arable lands, are pasturable lands, to each of which purposes the whole section, to the extent and in the proportions stated, is peculiarly suited. The remaining part of this section, which is the extremely mountainous portion, is noted for its extraordinary barrenness and sterility. The soil of the valleys of the eastern section is in all respects similar to that of the valleys of the western section; that of the plains is a deep brown loam, with a sub-soil of sand or clay, and that of the hills is usually a light brown vegetable earth, having a substratum of gravel, sand, or clay. The

mountains and hills, like those of the western section, are for the most part entirely sterile, yet, as before remarked, there are many portions of the hills and mountains even that are tolerably productive. There is a much greater variety of soil in this than in the western section; in one day's ride you may pass over every possible variety of soil, from the most fertile to the most barren and unproductive. The mountains are generally composed of talcose slate, granite, hornblend, and other primitive rock, and the hills are principally composed of marble, limestone, basalt and slate. The white clay before spoken of is also found in this section in great abundance. The proportion of barren land is much greater in this than in the western section. As nearly as I could ascertain, about one-third of the whole section is susceptible of cultivation, while about two-thirds, including the arable lands, are well suited to grazing purposes, and the remaining third, for extraordinary unfruitfulness and entire destitution of all fecundity, can be surpassed only by some portions of Oregon, which are seldom if ever surpassed in worthlessness.

The information which I was able to acquire does not afford me sufficient data upon which to predicate any very accurate conclusions in reference to the mineral resources of California; but sufficient investigations have been made to determine that many portions of the mountainous regions abound with several kinds of minerals, such as gold, silver, iron, lead and coal; but to what extent, the extreme newness and unexplored state of the country utterly preclude all accurate determination. It is, however, reported in the city of Mexico that some Mexicans have recently discovered a section of country in the extreme interior of California, which affords ample evidences of the existence of both gold and silver ore, in greater or less quantities, for thirty leagues in extent. Since this report is so very extraordinary, and since it originated as above stated, the safest course would be to believe but about half of it, and then, perhaps, we should believe too much. Dr. Sandels, a very able mineralogist, who had for some time been employed in his profession by the government of Mexico, spent four or five months in mineralogical investigation in Upper California. It was from this gentleman that the above information was derived; hence it is entitled to implicit reliance.

The climate of the western section is that of perpetual spring; having no excess of heat or cold, it is the most uniform and delightful. The mean temperature, during the year, is about 61° Fahrenheit; that of the spring is 66° ; that of the summer 70° ; that of the autumn 67° ; and of the winter is 61° Fahrenheit. The mean temperature of the warmest month is 74° , and that of the coldest month is 48° Fahrenheit. This statement is not designed to apply to the entire western section, for in the extreme northern portion it is rather colder than would appear from this, while in the extreme southern portion it is

rather warmer. It is applicable particularly to the latitude of 37° north, though very little difference will be found in all the various portions of this section, which will be seen from the following statement. In the extreme northern portion snow sometimes falls, but it very seldom lies more than two or three hours, always disappearing at the rising of the sun; but even here running water never freezes, nor does standing water ever freeze thicker than common window glass. In the southern portion, and even as far north as latitude 38° north, snow, frost and ice are unknown. An equality of temperature is found in all portions of this section which very few portions of the world afford; none, perhaps, unless it be some portions of Italy. In many portions of this section, immediately upon the coast, it is warmer in the winter season than in the summer. This is attributable to the fact of the winds blowing regularly from the north or north-west during the summer, and from the south-south-west or south-east during the winter, which also accounts for the extraordinary mildness of the climate during all seasons of the year. Compared with the climate in the same latitude on the east side of the Rocky Mountains, the difference is almost incredible. It is milder on the Pacific coast, in latitude 42° north, than it is in 32° north on the Atlantic coast, being a difference of more than ten degrees of temperature in the same latitude. No fires are required at any season of the year in parlours, offices, or shops, hence fuel is never required for any other than culinary purposes. Many kinds of vegetables are planted and gathered at any and every season of the year, and of several kinds of grain two crops are grown annually. Even in the months of December and January vegetation is in full bloom, and all nature wears a most cheering and enlivening aspect. It may be truly said of this country, that "December is as pleasant as May." The remarks here made, in reference to the mildness and uniformity of the climate, are applicable only to the valleys and plains, for the mountains present but one eternal winter. Hence it is seen, that you may here enjoy perennial spring, or perpetual winter, at your option. You may in a very few days, at any season of the year, pass from regions of eternal verdure to those of perpetual ice and snow, in doing which you pass through almost every possible variety of climate, from that of the temperate to that of the frigid zone.

The rainy season is generally confined to the winter months, during which time rains fall very frequently, though not incessantly. During all this season the weather is alternately rainy and clear; one-third, perhaps, of the whole season is rainy, and the residue is clear and delightful weather. The rainy season here, although it is confined to a portion of the same season of the year as that in Oregon, yet it differs in many respects from the rainy season in that country. There, the rains are almost incessant, but slight, while here they are much less frequent, but pour down in torrents. The only rain which falls

in this country is during the rainy season; during the residue of the year scarcely a drop of rain ever falls, but there have been a few instances of its falling as late as April and May, though this is very seldom. In addition to the moisture accumulated by the earth, during the winter season, the vegetation always receives additional moisture from the dews during the summer. It would seem that the inhabitants of a country watered only by the rains of three months and the dews of the residue of the year must suffer intensely from the effects of such continued drought, but such is not the case in this country. The extraordinary mildness of the climate, together with the falling of the rains, causes the vegetation to put forth early in the month of December, and to mature in the spring, or very early in the summer. So it is of wheat and other grains; being sown in November or December, they are matured in the spring or early in the summer, and before they are affected by the drought. In many portions of the country the vegetation, so far from being injuriously affected by the drought, is seen in full bloom during every month of the year. This remark, however, only applies to a certain species of vegetation, which, perhaps, derives a sufficiency of moisture from the dews. It is true that crops of wheat, corn, and the like, are much affected by the drought whenever there has been a deficiency of rain during the previous rainy season. When rains fall in abundance during the winter, it is held as a sure prelude, and in fact an assurance of an abundant crop the ensuing summer; but if there is an insufficiency of rain, crops are less abundant. Seasons which are preceded by a rainy season, which produces a deficiency of rain, are called dry seasons. These are said to occur generally once in four or five years, yet latterly two dry seasons have occurred in succession. Although the crops of the dry seasons are much less abundant than those of the ordinary seasons, yet, as will more fully appear upon a subsequent page, the crops even of a dry season are much better here than they are at any time in Oregon, or even in most of the States. —Pp. 81—84.

From what has been said in reference to the climate, very correct conclusions may be readily drawn in reference to the adaptation of this country to the promotion of health. There are few portions of the world, if any, which are so entirely exempt from all febrifacient causes. There being no low, marshy regions, the noxious miasmatic effluvia so common in such regions is here nowhere found. The purity of the atmosphere is most extraordinary, and almost incredible. So pure is it, in fact, that flesh of any kind may be hung for weeks together in the open air, and that too in the summer season, without undergoing putrefaction. The Californians prepare their meat for food, as a general thing, in this manner, in doing which no salt is required, yet it is sometimes used as a matter of preference. The best evidence, however, that can be adduced in reference to the superior health of this coun-

try, is the fact that disease of any kind is very seldom known in any portion of the country. Cases of fever, of any kind, have seldom been known anywhere on the coast, but bilious intermittent fevers prevail to a very small extent in some portions of the interior; yet they are of so extremely mild a type that it is very seldom found necessary to resort to medical aid. Persons attacked with these fevers seldom adopt any other remedy than that of abstaining a short time from food, or going to the coast. The latter remedy is said to be infallible, and I am inclined to that opinion, from the fact that fevers are so seldom known anywhere on the coast, and from one or two cases that came under my own observation. The extraordinary health upon the coast is perhaps attributable in a great measure to the effect of the exhilarating and refreshing sea-breezes which at all times prevail in that vicinity. All foreigners with whom I conversed upon this subject, and who reside in that country, are unanimous and confident in the expression of the belief that it is one of the most healthy portions of the world. From my own experience and knowledge of the country, especially of its entire exemption from all the ordinary causes of disease, and the extraordinary purity of its atmosphere, I am clearly of the opinion that there are very few portions of the world which are superior or even equal to this in point of healthfulness and salubrity of climate. While all this region, especially on the coast, is entirely exempt from all febrile causes, it is also entirely free from all sudden changes and extreme variableness of climate, or other causes of catarrhal, or consumptive affections; hence I cannot but think that it is among the most favourable resorts in the known world for invalids.

The productions will next engage our attention; and here such facts will be adduced as will, to some extent at least, sustain the view taken upon another page, in reference to the extraordinary fertility of the soil. The productions of the western section will be found to differ very materially from those of the eastern. I shall first notice those of the western section at some length. The timber of this section is generally confined to the coast, the rivers and mountains, but there are many portions of the different valleys, off the rivers, which are well supplied with good timber. The largest and most valuable timber is found upon the coast, where dense forests in many places are found, consisting of fir, pine, cedar, "red wood," (a species of cedar,) spruce, oak, ash, and poplar. Much of this timber grows to an enormous size, especially the "red wood," fir, and pine, which are frequently seen two hundred and even two hundred and fifty feet in height, and fifteen or twenty feet in diameter. This timber makes excellent lumber, but its vast size renders it extremely difficult either to chop or saw it with any degree of facility. The timber in the interior, both on the rivers and in the valleys remote from the rivers, consists chiefly of oak of almost every variety, including red, white

and live oak, ash, poplar, cherry and willow. It consists chiefly, however, of the different varieties of oak and ash. The timber of the mountains consists of pine, fir, arbor vitæ, cedar, and spruce. Besides the varieties of timber here mentioned, in many portions of the country there is a dense undergrowth of thorns, hazels, briars, roses, and grape vines, both upon the coast and in the interior. The timber of the eastern section is much the same as that of the western section. Here, as in that section, it is chiefly confined to the mountains and rivers, but it is generally of a much smaller growth than the same species found in that section. It consists principally of pine, fir, spruce, cedar, ash, poplar, cherry, and willow. The oak, ash, cherry, poplar and willow are generally found upon and in the vicinity of the streams, while the fir, pine, spruce and cedar are found mostly upon and in the neighbourhood of the mountains and the more elevated regions. The undergrowth of this section also consists principally of hazels, thorns, briars, and grape vines. As before remarked, there are some portions of this section which produce scarcely any vegetation besides the wormwood, or, properly, artemisia, and the prickly pear. It is frequently asserted that there is a very great deficiency of timber in this country, but such truly is not the case; there is ample timber in both sections, and in all the various portions of each, for all useful purposes. It is true that there is not the same quantities of timber here as are found in some portions of Oregon, or in some parts of the States, yet the same quantity is not required in a climate of such extraordinary mildness and uniformity.

Both the climate and the soil are admirably adapted to the growing of wheat, rye, oats, barley, beans and peas, hemp, flax, tobacco, cotton, rice, coffee, corn, and cane, as well as all kinds of vegetables, and especially such as potatoes, turnips, beets, carrots, onions, and the like. And both the soil and climate are no less adapted to the growing of the greatest variety of fruits, among which are apples, pears, peaches, plums, cherries, and grapes, as well as most of the tropical fruits, particularly such as oranges, lemons, citrons, dates, figs, and pomegranates. It is rather surprising that almost all of the tropical and northern grains and fruits should be produced here in conjunction, in the same latitude; but it is no more surprising than it is to find a southern climate in a northern latitude, as is the case everywhere upon the Pacific coast, and which is clearly attributable to the causes stated upon a previous page. There are other mediate causes which might be assigned, but the above is manifestly the proximate cause; yet, accounting for a northern latitude's possessing a southern climate is, after all, much like accounting for a northern man's possessing southern principles; many circumstances, in either case, must be taken into the account. Without attempting to assign any further reasons, however, I will proceed; for perhaps it is sufficient for the present purpose to show

that such is the fact, for which each can account at his leisure, and in his own way. Many kinds of the grains and fruits above enumerated are indigenous; for instance, the oats, wheat, and rye, many of the tropical fruits, and a great variety of grapes; flax, a kind of hemp, and red and white clover are also indigenous productions. The oats here alluded to have precisely the external appearance of our common oats, but upon examination it will be seen that the grain differs slightly from that of ours. It is rather smaller, and is covered with a kind of furzy integument; otherwise it is precisely similar to that of our common oats. They generally grow much higher than ours, and the stalk is much larger, but this is attributable to the superior fertility of the soil and the greater generative influence of the climate, and not to the difference of the species. Their usual height is about two or three feet, and the stalk is commonly about the size of that of our ordinary oats; but they are frequently found even eight feet high, having a stalk half an inch in diameter. Several of the farmers here informed me that they had often seen many thousands of acres in a body, which were higher than they could reach when on horseback. They only grow to this enormous height during those seasons which have been preceded by the falling of an abundance of rain during the rainy season. The season which I spent in this region was a dry season, that is, comparatively little rain fell during the previous rainy season; but upon several occasions I measured the stalks of oats, which were six feet long and nearly half an inch in diameter. In travelling through the various sections of the country, I have passed through thousands of acres which were from two to five feet in height, and as dense as they could possibly stand; when at the same time I almost hourly saw the old stalks of years previous, which were seven or eight feet in length and sufficiently large and strong for walking sticks. It is not uncommon, either in a dry or wet season, to see continuous plains and valleys of thousands of acres in extent, which are thickly and almost entirely clad with oats of two or three feet in height, which would produce much more abundant crops than our cultivated oats. In many portions of the country, in the interior, the Indians subsist almost wholly upon them; and in other portions, if a farmer wishes to grow a crop of oats, he has nothing to do but to designate a certain tract as his oat field, and either fence it or employ a few Indians to prevent the herds from grazing upon it, which being done, in May or June he reaps a much larger crop than we are able to do in any of the States with all the labour and expense of cultivation.

The clover of which I speak is in all respects like our ordinary red and white clover, grown in the different States, with the exception of its growing much larger. Its usual height is about two or three feet, but vast bodies of it are frequently found four or five feet in height and as dense as it can possibly grow. It is

chiefly confined to the valleys contiguous to the rivers, but it is also sometimes found in large bodies in many of the plains and upon the hills. All of the bottoms and valleys, as well as many of the plains and hills, abound with this clover, which, when matured, affords a most excellent natural hay, of which all kinds of stock are extremely fond. The flax found among the spontaneous productions is in all respects like that grown in the States. Its general height is two or three feet, though it is frequently found much larger. Unlike the oats and clover, it is chiefly confined to the northern portion of the country, and is seldom found in larger tracts than five or six hundred acres in a body, but wherever it is found it grows very densely and luxuriantly, even more so than that grown in the East. The fibres appear to be equally as strong as those of the ordinary flax, and it is in truth the same species. It is used by the Indians to a very large extent for the purpose of making seines and ropes, to which purposes it is found to be admirably suited. The hemp here found does not resemble ours, nor is it properly hemp, although so called; it is properly a species of the spurge, commonly called milk-weed, but there called hemp. Like the spurge, it emits a milky juice when wounded, grows about three feet high, and has a tough fibrous bark, which is used by the Mexicans and Indians in large quantities for making ropes, seines, and for various other purposes. Comparatively it grows in very small quantities, as you very seldom see more than fifty or a hundred acres of it together. Wheat and rye are also said to be indigenous growths, but I am not of that opinion, although I have seen wheat, rye, oats, clover, and flax, all growing together more than three hundred miles from any settlement. But upon a close observance I perceived that the wheat and rye were found only in the immediate vicinity of the encampments of the traders and trappers, who have for years traversed that country. Upon inquiring of those who have resided in that country for many years, I ascertained that the traders and trappers, in passing through the interior, frequently take both wheat and rye with them as food for themselves and their horses. These facts were fully convincing to my mind that the wheat and rye had been introduced into the interior in that manner. Other persons informed me that they had very frequently seen both wheat and rye far in the interior, and in portions of the country never visited by the traders and trappers; but still I am of the opinion that if not introduced in the above manner, they must have been introduced by the Indians or fowls, and hence that although they are spontaneous, yet they are not indigenous productions. The various grasses found here are much like those found in Oregon and many of the States. That common to the lower valleys and bottoms is much larger and coarser than that which grows upon the more elevated valleys, plains, and hills. The former usually grows about two or three feet high, while the latter grows but about

six inches or a foot high. The short grass is much the finest and sweetest, and is always sought after in preference by all herbivorous animals. Both kinds here alluded to form a very excellent quality of natural hay during the summer, of which the herds are very fond, and which is sought by many grazing animals in preference to the green herbage which is found at every season of the year. Thus it is seen that the various grasses, the oats and clover, all of which are indigenous productions, not only afford inexhausted pasturage during the growing season, but also inexhaustible provender during all the residue of the year.

Thus far I have only spoken of the indigenous productions—those which are produced by tillage will next be considered. The wheat will receive our first and most particular attention, as it is the principal grain grown in this country as yet, and as it will undoubtedly always constitute one of the principal staples of the country. There are several kinds of wheat grown here, among which are all the common varieties grown in the States, as well as several varieties which are unknown in the States. The wheat most commonly grown, however, is that which is called the wheat of Taos, which grows here about three or four feet high, and bears seven distinct heads or ears, each of which is equally as large as those of the common variety. One head is situated upon the stalk precisely as that of the ordinary wheat, and upon each side of this head there are three others, putting out from the main stock about three-fourths of an inch below each other. The berry is equally as large as that of the ordinary kind, and it is said to weigh about four pounds to the bushel heavier. This wheat produces very abundantly, as also do the various other kinds, as far as they have been tried. The average crop is from thirty to forty bushels to the acre, or to one of sowing, but an average crop of fifty, sixty, and even seventy bushels to the acre is frequently received. Several very respectable and credible gentlemen informed me that there had been an instance within their own knowledge, of a farmer's having received one hundred and twenty bushels to the acre; and that the next year, from a spontaneous growth, upon the same ground, he received sixty-one bushels to the acre. To many it will appear impossible that one acre of ground should produce that quantity of wheat, and hence to them the above statement will appear incredible; but I have not the least doubt of its entire correctness. This is no more extraordinary than it would be to see oats growing spontaneously four, or even five or six feet high, over thousands of acres; nor is it farther removed from the common order of things than it would be to see spontaneous growths of flax and clover of three or four feet in height, covering vast plains and valleys as far as vision extends—yet *these things are true*. Wheat is generally sown from the first of November to the first of March, and is harvested in May or June, depending upon the time of

its being sown, which is usually deferred until the commencement of the rainy season. This course is pursued because of the greater ease with which the lands are ploughed after the falling of the rains. Rye, barley, the cultivated oats, hemp, and flax, have not as yet been tried, but they will all undoubtedly produce extremely well, judging from what has been previously said in reference to their spontaneous productions. Corn is not grown to much extent, but wherever it is grown it yields extremely well, giving an average crop of about fifty or sixty bushels to the acre. It is proper, however, here to remark, that the corn grown here at this time is what is called the Spanish corn, which is a much smaller kind than our common Indian corn, and produces much less abundantly, and that after it is planted, no further attention is paid to it until it is matured. With ordinary cultivation even this kind would undoubtedly give a much more plentiful return. It is commonly planted in February and March, and is harvested any time after the last of June, by which time it always matures. The climate and the soil are both peculiarly adapted to the growing of tobacco, cotton, rice, and cane. Tobacco has already been tested with eminent success—it is said to grow with as much luxuriance, and to yield as plentifully as it does in Cuba, and the quality is thought not to be inferior to that grown in Cuba or elsewhere. Rice, cotton, and cane, have not as yet been tested, but the probability is that they will succeed admirably. It is said by some that cotton cannot be grown even with ordinary success where there is no rain during the summer; but experience controverts this view, for it is grown with eminent success in other portions of Mexico which have a similar climate, and which have not a drop of rain during the entire summer. All kinds of garden vegetables are grown here with extraordinary success, many kinds of which are planted and gathered at any and every season of the year. Melons of all kinds produce extremely well in all portions of this section, much better in fact than they do in any portion of the States.

The various fruits which are here produced have been enumerated upon a former page, including both those which are indigenous and those which are cultivated, as well as all of the northern and the tropical fruits. The latter are chiefly confined to the southern portions of this section, while the northern fruits abound in all the different portions, both in the north and the south. The same variety of the ordinary cultivated fruits of the North is not found here, as exists in many of the States, but several varieties have been introduced, and they have been found to yield most plentifully. Even in the most northern part of this section, the peach trees and various other fruit trees bloom in January and February, and in the southern part as early as December. The cultivated grape grows most luxuriantly, and produces very abundantly, and when ripe it is among the most delicious and grateful fruits that ever grace the festival board. There are

many vineyards here of ten or fifteen acres in extent, where the grape is grown in large quantities, and prepared and preserved in all the various manners known elsewhere. At these vineyards raisins are made in sufficient quantities for home consumption, and may undoubtedly be made in large quantities for exportation. They are usually prepared, either by partially cutting the stalks of the branches before the grapes are entirely ripe, and allowing them to remain upon the vine until they are perfectly dried, or by gathering them in their matured state and steeping them for a short time in an alkaline lye previous to their being dried. Those which are cured by the first method are the most delicious, and are much preferred, and they are perhaps not inferior to the Malaga raisins which are imported from Spain. Besides the delicious fruits which they afford for the table, they also afford a most generous wine, which always constitutes one of the grand essentials of a California dinner. Here I must confess that my temperance pledge, although formerly including all alcoholic, intoxicating, and vinous liquors, did not extend to the latter in California, and I am inclined to believe that old Father Matthew himself, however far he might be from doing so in the north, would drink wine in California—I know old Bacchus would.

A great variety of wild fruits also abound in all the different portions of this section, among which are crab-apples, thorn-apples, plums, grapes, strawberries, cranberries, whortleberries, and a variety of cherries. The strawberries are extremely abundant, and they are the largest and most delicious that I have ever seen; much larger than the largest which we see in the various States. They bloom in January and ripen in March, when they are gathered and dried in large quantities by the settlers and the Indians. The grapes are also unusually plentiful, especially in the vicinity of the rivers, creeks, and lakes, where the greatest variety are found. They are gathered in great quantities by the various tribes of Indians, not only for their own consumption, but for that of the white settlers. I have not unfrequently seen the Indians arrive at Capt. Sutler's Fort, with thirty or forty bushels at a time, which being measured, the captain would pay them some trivial compensation, when they would depart for their villages, with the view of returning the next and every succeeding day while the grapes were to be obtained. The grapes thus obtained by the captain were designed either for the table, sauce, or distillation. The mast of this section is also extremely plentiful in all the different valleys and other timbered lands, especially the acorns, which I have observed here in much greater abundance than I have ever seen them elsewhere. All the common varieties found in the States are also found here, and in quantities sufficient for the swine, and all the other animals, which subsist upon mast, as well as the various tribes of Indians, many of whom subsist almost entirely upon them the greater part of the year. Large spreading white oaks

are often seen, which produce thirty or forty bushels to the tree, under many of which the ground is literally covered with them several inches in thickness.

The grain and fruits of the eastern section differ somewhat from those of the western section, which is attributable to the great difference of the soil and climate. Many of the spontaneous productions, are, however, the same in many portions of this section; for instance, the oats, clover, flax and hemp, many of the wild fruits, and various grapes, all of which grow here also with the greatest luxuriance and in the largest quantities. The cultivated productions will, from the peculiarity of the soil and climate, be confined to wheat, rye, oats, flax, hemp, tobacco, corn, rice, beans, peas, the various vegetables, apples, pears, peaches, plums, grapes, and cherries. Cotton and corn cannot, perhaps, be grown with any degree of success in any portion of this section, nor can many, if any, of the tropical fruits. Nothing can be said with certainty in relation to the yield of the various cultivated grains and fruits which may be produced in this section, as all agricultural experiments have thus far been confined entirely to the western section; but judging from the peculiar adaptation of the soil and climate to their production, there is no doubt but that many of the various productions above enumerated may be produced here, with the same cultivation, equally as abundantly as they can be in the western section. This view is strengthened when we reflect that all the various indigenous grains and fruits grow equally as luxuriantly, and produce with equal profusion here as in that section.—Pp. 85—91.

The cattle are much more numerous than the horses; herds of countless numbers are everywhere seen upon all the different valleys and plains throughout this entire section. It is said that many of the farmers have from twenty to thirty thousand head. In whatever district you travel, you see many thousands of large fine cattle, which, in herds innumerable, are traversing those unbounded plains of oats, clover, and flax, of unparalleled growth. These cattle are undoubtedly superior to ours, especially for the yoke, as they are much larger, and they are equally as valuable for their milk, and much more valuable for their beef, which is always much fatter and more tender than that of our cattle. When domesticated, they are equally as gentle and as tractable as ours, but before they are domesticated they are as wild as the deer or elk. Each farmer, however, usually has as many of both oxen and cows as are required upon his farm, which are fully domesticated; but as a general thing they are not only as wild as the deer and elk, but they are as ferocious as tigers. Such is their ferocity that it is extremely unsafe to venture among them otherwise than on horseback, in which manner persons not only go among them with perfect safety, but a few persons may thus drive and herd them with the same facility that they could our cattle. Should a person venture among them on foot,

when they are collected in large herds, he would be instantly attacked and slain, unless he should find refuge in some position which would prove inaccessible by them. As a general thing, the farmers herd them regularly, and occasionally drive them into a "caral," or enclosure, when their timidity is so increased and their ferocity is so diminished that they are caught and branded with much facility. They are taken, when driven into these "carals," in a manner similar to that in which the horses are taken, as before described, but with a slight difference, which I will here notice. The "lasso," instead of being thrown upon their necks, is thrown upon their hindmost legs, when the other end of the "lasso," being firmly attached to the pommel of the saddle, the rider plies the spur to his horse, and in the twinkling of an eye the captured bullock is prostrated upon the ground, plunging and leaping with desperate effort, to acquire an upright position, but all to no purpose. Now the red-hot iron is applied, as the owner directs, giving such impress as he may have selected as his brand, when the "lasso" is detached from his legs by an Indian, who is very cautious to secure a safe retreat before the infuriated animal again obtains footing. There are stated times at which the different farmers thus collect their cattle for the purpose of branding them, when the various farmers in the same neighbourhood always convene, at each point designated, for the purpose of ascertaining whether their cattle are intermingled with those of their neighbours. Cattle were reared formerly for their hides only, but latterly they are reared for their hides, tallow, and beef. Several respectable gentlemen informed me that formerly it was very common for persons to kill hundreds and thousands of their cattle merely for their hides, leaving the beef of innumerable fine fat cattle to the wolves and buzzards. The same gentlemen also informed me that, in travelling through the plains of the interior, they had often seen the ground strewn with many hundreds of large fat cattle, which had been killed merely for the hides, and that the bodies being thus exposed to the rays of the sun, the tallow was actually exuding from them to such an extent that the surface of the ground was actually saturated with it for several feet around each. This affords another instance of the destructive prodigality of the Mexicans, which, however, is not latterly pursued; but the course pursued by them now would not be considered sufficiently frugal by an American, as many of them weekly kill three or four beeves, which are either used or thrown away by themselves or their servants. As has been before remarked, both cattle and horses are now driven in large numbers to Oregon, and the presumption is that the increasing emigration to that country will render it an extensive market for the various herds of this country for many years to come.

Much attention is latterly paid to the rearing of sheep, which are now found in great numbers, and which are of a very superior

kind. They thrive extremely well, in all the various portions of the country, but more particularly in the more elevated and mountainous regions. They are equally as large, and produce quite as much wool as ours, but it is of rather a coarser quality, which fact is perhaps partly attributable to the climate, but mostly to a total neglect in reference to their improvement. They produce their young twice annually, and many of the males have two distinct pairs of horns, or four horns, two upon each side of their heads, each coiling repeatedly around, as do those of the ordinary sheep. Many of the farmers have as many as ten or twelve thousand, of the wool of which various kinds of coarse cloths and blankets are manufactured. Sheep are also now driven to Oregon, in numbers sufficient to supply all the different settlers. The Hudson's Bay Company has latterly driven many to that country, with which all its various forts and settlements are supplied. Hogs are now reared by the Mexicans in all the different settlements, but not with a view of making pork; for, from some religious scruple, or some other scruple, or perhaps from a dislike to eat his kind, a Mexican will not eat pork. Hogs are, therefore, reared by them merely for the purpose of making soap, of which, by the by, they require large quantities. From the extraordinary abundance of mast here found, the hogs are always fat, so that they require no feeding at any season of the year. Besides the various fruits upon which they subsist, there are also very great quantities of edible roots, upon which, as well as upon the oats, clover, and the like, they subsist previous to the falling of the mast. Hogs, like all other animals here, increase to an extent almost unparalleled, but they are rather inferior to ours, yet they are equally as large, weighing usually from one hundred to six hundred pounds. Herdsmen are always employed by the different farmers, to take charge not only of the herds of horses, but also of the cattle, sheep, and hogs. These herdsmen always remain with or in the immediate vicinity of the different herds, driving them from place to place, as circumstances may require, with a view of protecting them from the incursions of the Indians, and wolves. The herdsmen thus employed are either Indians or the lower order of Mexicans, who are well skilled in their particular business, to which they are very attentive, and in which they appear to enjoy almost infinite delight. The eastern section is also well adapted to the rearing of herds of all kinds, though, as before remarked, it is not as eminently suited to this purpose as the western section. That this section is suited in more than an ordinary degree to grazing purposes, will be readily collected from what has been said upon the former pages, in reference to its climate and productions, but, as no experiments have been made in this respect, nothing can be said with definite exactness; enough, however, has been said to enable each to draw his own conclusions with some degree of correctness.

The game of the western section consists

for the most part of elk, deer, antelope, bear, wolves, goats, foxes, squirrels, raccoons, martens, muskrats, beavers, otters, and seals. The most numerous of these are the elk and antelope, which are found in immense numbers in all the various plains and valleys, and upon the hills and mountains. It is very common to see herds of five or six hundred elk ranging from vale to vale, amid the oats, clover, and flax, with which the plains and valleys everywhere abound. I remember to have been riding through these plains with a countryman of ours, when, just as we passed a point of timbered country, near the river, about four or five hundred elk emerged from the woods. As they were passing, score after score in quick succession, I suggested to my companion the propriety of shooting one of them; to which he replied that he "intended to do so," but made no other arrangements than to dismount. Now, fearing that he would not shoot until they had all passed, I inquired why he did not shoot. He replied that he "would in a moment," but he permitted them all to pass excepting the very last, which he shot as soon as it came opposite to him, when it ran a short distance, but soon fell. We were instantly at the spot, when the *California* hunter commenced to divest our victim of its outer garment. During this process I inquired of him why he did not shoot before, when they were much nearer him, and the opportunity was so much more favourable. He replied that he saw I was no hunter. "The one behind," said he, "I selected because it was the fattest; and I knew it was the fattest because it was behind, for the fat ones cannot run as fast as the lean ones." This view I found to be correct—for a fatter animal I never saw, in California or elsewhere. In every part of the country through which I passed, I found them equally abundant. Many of the farmers, instead of killing their cattle, go or send their servants out whenever they wish to secure a supply of meat, and kill as many as they may require for their families and the Indians in their service. Several of these gentlemen informed me that they had very frequently killed seven or eight each morning, and in less time than one hour. The elk here are always very fat, and they make the very best of beef, which is, in fact, much tenderer and sweeter than that of our common cattle. They are much larger than those which are found on this side of the mountains, weighing usually from three to six hundred pounds. They can be as certainly relied upon for their meat as the common cattle, for they are very nearly as domestic. They are very easily domesticated, in which state they are even now found in various portions of this section, and are seen intermingling with other domestic animals upon the farms.

The antelope are equally as numerous as the elk, and are much more domestic. In whatever direction you travel, you will see many hundreds of them, either grazing upon the plains or collecting in large flocks in the shades of the scattering pines throughout the

plains. They are beautiful animals, but neither their skin nor flesh is as valuable as that of the elk. Their skins are much less valuable, because of their thinness, and hence inadaptation to the making of leather. In this respect they very much resemble the skin of the deer, as which they are equally as thick and valuable. Their flesh is much tenderer than that of either the elk or deer, but it is also much leaner, and consequently much less nutritious. These animals have many peculiarities, some of which are perhaps worthy of a partial notice. They are extremely domestic, so much so that they will at times remain in the shades of the trees until you approach within a very few rods of them, when they will bound off slowly, occasionally stopping and turning towards you, then again leaping slowly away. Large numbers of them will very often trot directly towards you, and gazing intensely at you, they will thus approach within eight or ten rods of you, when they will leap frightfully away, a distance of several rods, then turning towards you again, they will with a fast pace approach very near to you as before, then standing and looking eagerly at you, they remain until their timidity is again aroused, when they again bound swiftly away. Thus they approach, and re-approach, very frequently and until their curiosity is satisfied, or their fears are aroused, when they leap and bound away with the velocity of light, and are soon lost in the stalworth vegetation of the vast valleys. Their curiosity is evidently excited, which is the cause of their thus approaching and re-approaching. Those who are acquainted with their peculiarity in this respect, are frequently able to kill many of them merely by distending a red handkerchief, or any red cloth, which will so attract their attention that they will immediately advance within a few rods of them, where they will stand gazing upon the cloth until they are fired upon, when those which are not affected by the fire gallop slowly away a few rods, when they again advance as before. This is frequently repeated until dozens of them have fallen victims to their inherent curiosity. The deer are much less numerous than either the elk or antelope, but they are much more plentiful than they are in the States. There are various kinds of the deer found in this section; such, for instance, as the white-tailed, the black-tailed, and the moose-deer. All of these abound in every part of this section, but because of their comparative wildness, and the great abundance of preferable game, they are very seldom hunted.—Pp. 94—97.

The feathered animals of the western section consist chiefly of geese, ducks, brants, cranes, gulls, pelicans, plovers, eagles, hawks, ravens, wood-peckers, pheasants, partridges, grouse, snow-birds, blue-birds, black-birds, and robins, with a great variety of other birds common in the States. The former of these, and especially the water-fowls, are vastly numerous, particularly upon the coast, and in the vicinity of the rivers, bays, and harbours. During the winter and spring seasons all the

various lakes, bays, and rivers, as well as the lowlands, and wheat-fields, throughout the whole country, are literally covered with the various water-fowls, which appear to have convened here from all the northern world. In many portions of the country, during these seasons, they congregate in such immense numbers that their unceasing confusion proves noisome in the extreme to the settlers. The wheat-fields and the lowlands are their usual haunts, during the winter, when hundreds of them may be killed in a few hours. I was informed that one man could at any time during the winter obtain feathers sufficient for a feather-bed from those which he could kill in a very few hours. When passing down the Sacramento River, and crossing the Bay of St. Francisco, I have frequently been greatly annoyed by the almost deafening, tumultuous, and confused noises of the innumerable flocks of geese and ducks which were continually flying to and fro, and at times blackening the very heavens with their increasing numbers, and making the aerial region ring with their tumultuous croaking and vehement squeaking.—P. 99.

The principal settlements, which are disconnected with the forts, missions, and towns, are chiefly within ten or twelve leagues of the coast, with the exception of those upon and in the immediate vicinity of the Sacramento, which are from ten to fifty leagues from the coast, and which are the most extensive of all the interior settlements of California. These settlements are made up almost entirely of foreigners, and chiefly of Americans, consisting of about two hundred persons, thirty-three of whom arrived with me in that country in the autumn of 1843, but the greater portion of them had resided there for several years previous. They all have fine herds of cattle and horses, with farms, under a good state of cultivation, upon which they grow a great abundance of wheat, corn, oats, and flax, as well as a great variety and superabundance of vegetables, and that too with very little labour or expense. Many of these settlers are in very prosperous circumstances, and they are all doing extremely well, considering the very short period of their residence in that country. They usually sow annually several hundred acres of wheat, from which they are not only able to supply themselves, but also to supply all the emigrants who are annually arriving, as well as to furnish much for exportation. All the farmers, throughout the different portions of the country, are succeeding extremely well; they all grow considerable grain, and especially wheat, but they devote their chief attention to the rearing of cattle, horses, and sheep. As has been before stated, many of them have as many as fifteen or twenty thousand head of cattle, and as many horses, and from five to fifteen hundred sheep. The foreigners here conduct their agricultural labours very much as they do in the States, but their improvements are materially different; they very seldom construct rail fences, as they find it is less expensive to enclose their lands

by ditches, or to employ a few Indians to guard their crops until they are matured and harvested. Crops are thus very easily protected, as the country is but sparsely settled, and as the plains and valleys everywhere abound with oats, and clover, so that there is very little inducement for the various herds to intrude upon the cultivated lands. In the present thinly settled state of the country, an Indian will effectually guard a hundred acres—hence crops are protected in this manner with much less expense than they could be by fencing. Fencing, by ditching, is attended with much less expense than fencing in the ordinary manner—not because timber cannot be obtained, but because the Indians perform all labour of that kind with much expertness, and because they are entirely unacquainted with the business of making rails. The buildings upon the various farms here, and throughout all the interior, like those in the towns, are chiefly of “adobies,” which are found by experience to make much the best buildings. These buildings are preferred for various reasons. They are much less expensive, and they are much cooler, and more pleasant in the summer, and warmer in winter, than either those made of stone, the ordinary brick, or of wood. But the chief circumstance which gives them the preference is, that the Indians are able to perform all the labour in their construction. The roofs are either of tiles or shingles, and the first floors are generally of “adobies,” of the same size and kind as those of which the walls are constructed. The farmers find all the materials for this kind of buildings wherever they wish to build, and, by calling a few Indians to their aid, they are able at any time to complete a very comfortable building of this kind in a very few days. This species of building is thought to be equally as permanent and durable as either those constructed of brick or stone, especially in a climate of so very little rain, and of such extraordinary dryness and aridity. The same kinds of buildings, I find, are used in all the southern portion of Mexico, where they are much preferred, and for the same reason that they are here preferred.

All of these settlements, as well as those connected with the forts, missions, and towns, are supplied with all the means of subsistence within themselves; they not only rear their own herds, grow their own grain, and vegetables, but they also make their own cloth, and they are all supplied with flouring-mills, which answer all the purposes of each settlement. These mills are either horse-mills or wind-mills, yet they are found to answer all useful purposes of all the different settlements, forts, missions, and towns. These are the only kinds of flouring-mills in the country as yet, but a steam flouring-mill was in contemplation; and, in truth, it was commenced and in a forward state of progression when I left that country. Lumber is generally sawed by hand, as there are but few saw-mills as yet in the country. There were but two saw-mills in operation in the autumn of 1843, one

of which was owned by a Mr. Graham, and the other by a Mr. Yunt, both of which gentlemen are countrymen of ours. Besides these, there was also a steam saw-mill, which was then recently commenced by a Captain Smith, who is the proprietor of the steam flouring-mill before alluded to, and who is also a countryman of ours. Both of these mills were in a state of completion when I left that country; the frames and other wooden work were very nearly finished, the engine and other machinery had been received, and were being erected. It was thought that both of these mills would be fully completed by the first of January, 1843, at farthest. These mills are being erected at Bodaga, which has been before described, and which is a very favourable position for machinery of that kind, especially for a saw-mill, as the whole surrounding country abounds with the most admirable timber for lumber and ship-building. Here I will take occasion to remark, that the reason of machinery's not being established in this country to a greater extent, is not that there is not a sufficient number of sites favourable for that purpose, for there are very few portions of the country but that abound with the most eligible sites for extensive machinery of any kind. Many of those portions of the country in the vicinity of the different bays, and of the coast generally, as well as those portions far in the interior, afford numerous favourable situations for extensive machinery. The only causes why machinery has been introduced to so limited an extent are, that the very sparse settlement, and the general inattention to the industrial pursuits, would not heretofore have warranted such expensive enterprises, and that foreigners of that sterling enterprise requisite to develop the resources of that delightful country have not, until quite recently, turned their attention to that remote region. But now a different state of things exists—a new era in the improvements of California has commenced—here, as in Oregon, foreigners from all countries, of the most enterprising and energetic character, are annually arriving, selecting and improving the most favourable sites for towns, and selecting and securing extensive grants of land, in the most desirable portions of the country.

The entire population of Upper California, including foreigners, Mexicans, and Indians, may be estimated at about thirty-one thousand human souls, of whom about one thousand are foreigners, ten thousand are Mexicans, and the residue are Indians. By the term foreigners, I include all those who are not native citizens of Mexico, whether they have become citizens by naturalization, or whether they remain in a state of alienage. They consist chiefly of Americans, Englishmen, Frenchmen, Germans, and Spaniards, but there is a very large majority of the former. The foreigners are principally settled at the various towns, and upon the Sacramento—those of whom who are located at the latter place consist almost entirely of our own citizens. The foreigners of this country are generally very intelligent;

many of them have received all the advantages of an education, and they all possess an unusual degree of industry and enterprise. Those who are emigrating to that remote and almost unknown region, like those who are emigrating to Oregon, are in all respects a different class of persons from those who usually emigrate to our frontier. They generally possess more than an ordinary degree of intelligence; and that they possess an eminent degree of industry, enterprise, and bravery, is most clearly evinced from the very fact of their entering upon this most arduous and perilous undertaking. Very few cowards ever venture voluntarily to meet all those imaginary and real dangers to which they are necessarily exposed in crossing the Rocky Mountains or doubling Cape Horn; and no indolent man, even if he possess the bravery of Cæsar, can ever summon the requisite energy—and if he possess the bravery of Cæsar, and the strength and energy of Hercules, and lack the enterprise, he will have no disposition to attempt a feat so arduous and irksome. Hence, if he possess an unusual degree of cowardice, he dare not; if nature has supplied him with a great competency of indolence, he cannot; and if he be not blessed with more than an ordinary share of energy and enterprise, he will not emigrate either to Oregon or California. The above gives some of the leading traits of character of the foreigners of California; but extraordinary kindness, courtesy, and hospitality, are additional traits which they possess to an unusual degree. A more kind and hospitable people are nowhere found; they seem to vie with each other in their kindness and hospitality to strangers, and at the same time they treat each other as brothers. Here you see the citizens and subjects of almost every nation in the civilized world, united by the silken chains of friendship, exerting every energy, and doing everything in their power to promote the individual and general welfare. Upon the arrival of a stranger among them, the question is not, is he an Englishman, an American, or Frenchman, but is he a foreigner? which latter, if he is found to be, he receives all that kindness and hospitable attention peculiar to the foreigners of California. These are truly a happy people, among whom no distinction of clime is recognised, national preferences and prejudices do not exist, religious rancour is hushed, and all is order, harmony, and peace. The sages of bygone days sighed for such scenes as here exist, but they realized them not; the children of fancy dreamed their dreams of union and harmony, but the foreigners of California enjoy their desired realities.—Pp. 110—113.

The Mexicans here are a peculiar people, not only in reference to their intelligence, government, and all other particulars before mentioned, but also in reference to their manners and customs. The lower order of them live in mere huts, the walls of which are constructed of poles, which are set upright, side by side, one end being permanently fixed in the ground; the other ends are attached with

raw-hide ropes to a pole, which is placed horizontally on each side of the walls thus constructed, and about six or seven feet from the ground. The four walls being thus erected, poles are then placed transversely from one wall to the other, which are covered either with hay, flags, or cornstalks, constituting the roof, when the hut is completed, having neither floor nor chimney. The second and higher orders occupy such buildings as have been described upon a former page, most of which are also without either chimneys or floors. No furniture is generally found in or about the houses of the lower orders, excepting here and there a raw bullock's hide spread upon the ground, which, together with a blanket or two, constitutes their beds and bedding. Their clothing generally consists of nothing more than a shirt and a pair of pantaloons, yet some of them also have a kind of rude, primitive hat, and sandals. The chase, and servitude to the higher orders, furnish them a livelihood; they subsist almost entirely upon meat, fish, oats, and edible roots. Those of the second and higher orders, who reside in the interior, although they have "adobie" houses, yet they generally have neither beds, chairs, tables, nor any other furniture, excepting such beds as those before described, and a raw hide spread upon the ground, which constitutes a table, with a few stools or bullocks' heads, which answer as chairs. Their apparel consists of a shirt, a pair of pantaloons, some kind of a hat, and shoes, or sandals, in addition to which some have a pair of breeches, and a blanket, with a perforation in the middle, through which they put their heads, and thus form, as they think, a very convenient coat or cloak. Meat, fish, beans, bread, and fruit, constitute their food. But they subsist chiefly upon the former, as a matter of preference. Should you call at the residence of one of these Mexicans, even of the highest class residing in the interior, you would not only be received very kindly, but you would also be annoyed with continued proffers of all the luxuries which they possess. And should you remain until noon, a large quantity of beef will be roasted before the fire, which, when done, will be attached to a few sticks which are driven into the ground for that purpose, in the middle of the room, when you are invited to sit down with them and partake of the rich repast; at the same time you are offered a stool or beef's head as a substitute for a chair, if there happens to be one convenient; if not, you are expected to sit upon the ground. Being thus located, you now commence the dissection and mastication of the half or quarter of a beef, as the case may be, with which you are now confronted; but in this operation you labour under the disadvantage of having none of the ordinary instruments used upon such occasions—hence you are under the necessity of using your pocket-knife, or such other knife as you may chance to have in your possession. Among some of these people, in addition to the roasted beef, you would also be furnished with a little bean

soup, and perhaps some bread—but they all view plates, knives, and forks, and the like, as mere useless appendages. Should you call upon those of the lower order, with the view of obtaining a dinner, the presumption is that the whole affair would result in a disgusting failure, if not on their part in an attempt to procure something for you to eat, at least upon your part in your attempt to eat what they have succeeded in procuring—but whatever they have they will readily offer you, with much apparent anxiety to accommodate. The higher order of those who reside in the different towns, and at the missions, generally live very well—much, in fact, as the foreigners do who are equally as abundantly supplied with all the necessaries and luxuries of life as citizens of our own country, or those of any other. All classes of the Mexicans are unusually kind and hospitable to foreigners, as far as it relates to their reception and treatment as guests. Whatever attention and kindness you may receive at their hands while guests, and however long you may remain with them, they will receive no compensation, but to your proposition to remunerate them, they invariably reply, "God will pay."

Labour of all kinds is performed by the Indians and the lower order of the Mexicans, but those who are not bound in servitude to others labour very little, as a competency of food and raiment is readily acquired with very little exertion. Among all classes oxen are principally used for the draught, drawing by their horns, instead of their necks, as in the ordinary manner; a strong piece of timber, about as large as an ordinary yoke, is placed upon the necks of the oxen, just back of the horns, to which it is permanently attached by means of a raw-hide rope. To the middle of this new-fashioned yoke, a strong raw-hide rope is affixed, to which the cart, plough, or whatever else is to be drawn, is attached, when all is in readiness for actual service. Those oxen, yoked in this manner, draw most extremely large draughts, but by no means as large draughts as they could draw if yoked in the ordinary manner. The plough which is in use among the Mexicans is certainly among the most simply constructed and cheapest of farming utensils, being generally a mere forked stick, one prong of which, being pointed, answers for the share, and the other, having a notch cut at the end, to which a rope may be attached, constitutes the beam, while the main stalk, extending back a few feet from the union of the two prongs, constitutes the handle. This is the California plough, which is in general use throughout the entire country; but, as an improvement upon this plough, some of the Mexicans construct one in a different manner, though with the same regard to cheapness, being two sticks of timber so attached as to form a plough, very much like that just described, and designed only as a substitute for that when a natural fork cannot be conveniently found. Horses are seldom used otherwise than as saddle-horses, but we frequently see large draughts drawn by them,

which, instead of being harnessed in the ordinary manner, are put under the saddle, the girth of which is drawn extremely tight, when one end of the strong raw-hide rope is attached to the stone, wood, or whatever else is to be drawn, while the other end is firmly attached to the pommel of the saddle. Every thing being thus arranged, the Mexican, with his heels loaded down with ponderous ginglyng spurs, now mounts his steed, to whose sides he plies his heels with such *pointed* exactness, such force and confused ginglyng, that, as the only alternative, he leaps and darts away with his immense load, notwithstanding its very great ponderosity. With horses harnessed in this manner, it is quite common to see Mexicans on their way to market, their vehicles being a dry bullock's hide, to which one end of a long raw-hide rope is attached, the other end of which is attached to the pommel of the saddle of their riding-horses. Upon this hide, thus dragging upon the ground, are heaped vegetables, fowls, and whatever else they may have in readiness for the market, as well as two or three women and children, which, from all appearances are not designed for the market, or, at all events, it would seem that they would not sell to a very good advantage without the preparatory expense of a thorough scouring. Upon arriving in market, I have frequently seen these inventive geniuses, with their strange omnibuses and omnifarious loading, passing about from place to place until they disposed of all their load, excepting that part of it which partook somewhat of humanity, when they also disposed of their extraordinary vehicles, and returned to their homes as they best could, some on horseback, some on foot, and others, I know not how, unless by "*steam*," to raise which they appeared to be making some efforts, which I thought would most likely succeed. These are the vehicles in common use among the Mexicans, but many of the foreigners as well as some of the higher order of the Mexicans have carts, wagons, and even carriages; but these are very seldom seen, and especially the latter, as travelling is as yet almost entirely on horseback and by water, the former of which methods is, however, much the more generally adopted both by the Mexicans and foreigners.—Pp. 124—127.

The market, trade, and commerce will now be briefly noticed, when I shall have done with California. There is at this time an ample market in all the various portions of this country for all the surplus products of whatever kind; and this market is certain and uniform, being subject to none of those fluctuations to which our market in all portions of the States is subject. Wheat has uniformly sold in all portions of this country for about one dollar per bushel, which it is now worth; corn is worth fifty cents per bushel; beans one dollar per bushel; and potatoes fifty cents per bushel; cattle are worth from one to five dollars per head; horses, from three to ten dollars; sheep, from one to two dollars; and hogs from one to three dollars; hides are worth from one to two dollars each; tallow

from two to five cents per pound; beef from one to three cents per pound; butter from five to twenty cents per pound; and flour from five to eight dollars per barrel; which prices, with very few exceptions, have remained the same for successive years. The Hudson's Bay Company, and the Russians, at present afford an ample market for all the wheat which is as yet grown in this country; and they, as well as the American merchants, afford an extensive market for the furs, hides, and tallow, as well as much of the beef, butter, and vegetables; yet for the latter, especially the beef, butter, and vegetables, the ships of war and the whale ships afford the most extensive and valuable market. The increasing emigration, however, will afford an extensive market for most of the surplus grain, as well as for many cattle, and horses, sheep, and hogs, for many years to come; yet the market for all the products of the country will be ultimately found, in the South American States, the various islands of the Pacific, the Russian settlements, China, and England. The very great variety of the productions will require a variety of markets; producing the tropical productions, it requires a northern market; and as it produces the northern productions, it requires a southern market. The staples will eventually be beef, pork, fish, various kinds of grain, flour, wool, hides, tallow, furs, lumber, cotton, tobacco, rice, sugar, and coffee, as well as coal, iron, and various other minerals. This very great variety of productions will afford the people of this region all the means of subsistence within their own country, will vastly enhance its wealth, and add in an eminent degree to the prosperity and happiness of the people.

The trade of this country is chiefly carried on at the different towns, where, considering the extreme newness and unsettled state of the country, it is already very extensive. At each of the towns before enumerated, there are several stores, at which an extensive business is daily transacted, which is found to be very lucrative. All kinds of dry goods, groceries, hardware, and cutlery, are much dearer here than they are either in Oregon or the States, being sold here at prices about five hundred per cent. higher than they are in either of those countries, which is owing to the imposition of excessive and unparalleled duties upon imports. The enormous amount of duties that is annually received by the government, or rather the prodigal officers of the government, notwithstanding the innumerable leaks, is estimated at two hundred thousand dollars. Wages of labour, both for mechanics and ordinary hands, is very high—those of the former being from two to five dollars per day, and those of the latter from one to three dollars per day. The cause of wages being so very high, is attributable to the fact of there being so very few mechanics in the country, and the great aversion to industrial pursuits which has heretofore existed in that country. This aversion to industry evidently arose from the fact of there being no apparent necessity to labour; or, in other words, from the unpa-

ralleled facilities which here exist for acquiring a competency, and even a superfluity, by the easy process of doing nothing. Indians are readily employed, and in any numbers, at the trifling expense of merely furnishing them such clothing as a coarse tow shirt, and a pair of pantaloons of similar cloth, and with such food as meat alone, or whatever else you may feel disposed to furnish for them—for any thing which you might feel disposed to provide for them would be preferable to the crickets and grasshoppers upon which they have formerly subsisted. There are several foreigners who have from one to four hundred of them employed upon these terms; and, when thus employed, should they leave their employer without just cause, he is authorized to retake them wherever he may find them, in whosoever service they may be engaged. It is usually understood that slavery does not exist, in any form, in any portion of the Mexican dominions; yet the natives, both in California, and several other portions of that country, and in truth in all portions of it, are in a state of absolute vassalage, even more degrading and more oppressive than that of our slaves in the South. Whether slavery will eventually be tolerated in this country, in any form, I do not pretend to say, but it is quite certain that the labour of Indians will for many years be as little expensive to the farmers of that country as slave labour, being procured for a mere nominal consideration.

Considering the very short space of time which has elapsed since the different governments have turned their attention to this country, and the very little which is as yet known in reference to it, its present commerce is scarcely paralleled; some conception of which may be drawn from what has been said upon a former page, in reference to its extensive imports and duties. Fifteen or twenty vessels are not unfrequently seen in many of the various ports at the same time, displaying the national flags of all the principal powers of the world. Merchant vessels of the United States, England, France, Russia, and Mexico, as well as the ships of war and the whale ships of the four former governments, are to be seen at almost any time in the different ports of this country, and of all of which there are frequent arrivals and departures. The ships of war which cruise in the Pacific touch very frequently at the various ports of this country, for the purpose of obtaining fresh supplies of water and provisions, and maintaining the rights of their respective governments, as well as for the purpose of capturing now and then a small town, or seizing here and there upon an island of the Pacific. The merchant vessels are much the more numerous, and are chiefly those of the United States, which arrive in that country each spring, and depart

for the States every autumn or winter. Arriving in the spring, they are engaged in the coasting trade until the latter part of the fall or the early part of the winter, when they depart for the States with cargoes of hides, tallow, or furs, which have been collected during the previous year. About one-half of the merchant vessels engaged in this trade always remain in the country, engaged in the coasting trade, while the residue return to the States, England, or France, for the purpose of renewing their stock of goods. Several of these vessels usually belong to the same houses, either of Boston or New York; which always keep a number in the country, while they employ others constantly in exporting the products of California, and importing goods for that trade, which they dispose of at most extraordinary prices. The whale ships touch at the various ports for the purpose of obtaining supplies of provisions and water, and also for the purpose of trade with the inhabitants. Besides the ships and vessels above enumerated, there are numerous others, as well as various barques and brigs, which annually touch at the various ports of this country, not only from the States, England, France, and Russia, but also from the Sandwich Islands, the Russian settlements, and China.

The foregoing will enable us to form very correct conclusions in reference to the present and future commerce of this infant country—the former of which, considering the newness of the country, and the sparseness of the population, is scarcely equalled; and, if the present may be considered as a prelude to the future, the latter is destined, in a very few years, to exceed by far that of any other country of the same extent and population in any portion of the known world. We are necessarily driven to this conclusion, when we consider the vast extent of its plains and valleys, of unequalled fertility and exuberance—the extraordinary variety and abundance of its productions—its unheard of uniformity and salubrity of climate—in fine, its unexhausted and inexhaustible resources, as well as its increasing emigration, which is annually swelling its population, from hundreds to thousands, and which is destined at no distant day to revolutionize the whole commercial, political, and moral aspect of all that highly important and delightful country. In a word, I will remark that, in my opinion, there is no country in the known world possessing a soil so fertile and productive, with such varied and inexhaustible resources, and a climate of such mildness, uniformity, and salubrity; nor is there a country, in my opinion, now known, which is so eminently calculated, by nature herself, in all respects, to promote the unbounded happiness and prosperity of civilized and enlightened man.—Pp. 131—133.

FARNHAM ON CALIFORNIA.

Extracts from "Life and Adventures in California, and Scenes in the Pacific Ocean. By Thomas J. Farnham. New York, 1847."

THE twenty-fourth morning of April was clear; the sun came up the eastern hills on a landscape of sweet things. No one born and dwelling in the rugged, changing seasons of the North, can know, without experiencing, the delights of a climate like that of California. From spring to spring again, all is friendly; from morning till morning comes again, all is pleasant to breathe and to see; from hour to hour, the body feels in the air a balmy blessing; from moment to moment, the blood leaps vigorously through the frame.—P. 94.

We ate and drank freely. Who could do otherwise? The mellow laugh of childhood, the holy kindness of maternal care, the pride of the paternal heart, the love of woman, the sky and fragrant breezes of a California lawn, the open sea, the giant woodlands, the piping insects, the carolling of a thousand birds, the voices of a boundless hospitality, invited us to do so. The finest dish of all the goodly array of fat things, the brunette lips excepted, was the roasted mussels. The Indians in attendance gathered a number of bushels, piled them upon a large log-fire, and in a few minutes presented them to us, thoroughly cooked and delicious to the taste. Indeed, I hope for no better fish. They are tender as an oyster, with as fine flavour, and the abundance of them is really remarkable! The coast is lined with them.—P. 97.

On the thirtieth a light breeze bore us early in the morning past San Miguel. This is an island, about fifteen miles from the coast. It is ten miles in circumference, with a rocky, barren, and dry surface, marked here and there with a few fruitful spots and streams of water. At nine o'clock we were off Santa Rosa, an island about the same distance from the land, twenty miles in circumference, piled with lofty, barren hills, interspersed with a few forests and fertile districts. Next came Santa Cruz, an oblong island, about forty miles in circumference, with some woodlands and fruitful vales. Farther off shore and southward, are the islands of Santa Barbara, San Nicholas, and San Clemente. They lie in a line running south-east and north-west, and form the outer wall of the roadstead, called the Canal de Santa Barbara. These islands have much high land, composed of dark, shining rocks, apparently of volcanic origin. They are partially covered with trees, but a greater portion of their surface is barren sands and

rocks. They are densely populated with goats.—P. 107.

The coast from Monterey to the Canal de Santa Barbara is broken into elevated hills, fringed with forests of pine and oak, and covered with the wild grasses. From these flow many valuable little streams, which gurgle and plash down deep and verdant ravines, to the sea. It is a beautiful wilderness; a country for the wild horse, the mighty grisly bear, the undomesticated cattle of a thousand hills; a blithe domain for the human race, when true and valiant men shall govern it.—P. 108.

There is an old Catholic mission one mile and three-quarters above the town, called El Mission de Santa Barbara. The church itself is a stone edifice, with two towers on the end towards the town, and a high gable between them. The friars complimented Father Time, by painting on the latter something in the shape of a clock dial. In the towers are hung a number of rich-toned bells, brought from old Spain nearly a hundred years ago. The roof is covered with burnt clay tiles, laid in cement. The residence of the Padres, also built of stone, forms a wing with the church, towards the sea. The prisons form another, towards the highlands. Hard by are clusters of Indian huts, constructed of adobies and tile, standing in rows, with streets between them.

The old Padres seem to have united with their missionary zeal a strong sense of comfort and taste. They laid off a beautiful garden, a few rods from the church, surrounded it with a high substantial fence of stone laid in Roman cement, and planted it with limes, almonds, apricots, peaches, apples, pears, quinces, &c., which are now annually yielding their several fruits in abundance. Before the church they erected a series of concentric urn fountains, ten feet in height, from the top of which the pure liquid bursts, and falls from one to another, till it reaches a large pool at the base; from this it is led off a short distance to the statue of a grisly bear, from whose mouth it is ejected into a reservoir of solid masonry, six feet wide and seventy long. From the pool at the base of the urn fountains water is taken for drinking and household use. The long reservoir is the theatre of the battling, plashing, laughing, and scolding, of the washing-day. Around these fountains are solid, cemented, stone pavements, and ducts to carry off the surplus water. Nothing of the

kind can be in better taste, more substantial, or useful.

Above the church and its cloisters, they brought the water around the brow of a green hill, in an open stone aqueduct, a rapid, noisy rivulet, to a square reservoir of beautiful masonry. Below, and adjoining this, are the ruins of the Padres' grist-mill. Nothing is left of its interior structure but the large oaken ridgepole. Near the aqueduct which carries the water into the reservoir of the mills, stands a small stone edifice ten feet in length by six in width. This is the bath. Over the door, outside, is the representation of a lion's head, from which pours a beautiful jet of water. This little structure is in a good state of preservation. A cross surmounts it, as, indeed, it does every thing used by the Catholic missionaries of these wilderness regions. Below the ruins of the grist-mill is another tank one hundred and twenty feet square, by twenty deep, constructed like the one above. In this was collected water for supplying the fountains, irrigating the grounds below, and for the propulsion of different kinds of machinery. Below the mission was the tan-yard, to which the water was carried in an aqueduct, built on the top of a stone wall, from four to six feet high. Here was manufactured the leather used in making harnesses, saddles, bridles, and Indian clothing. They cultivated large tracts of land with maize, wheat, oats, peas, potatoes, beans, and grapes. Their old vineyards still cover the hill-sides. When the mission was at the height of its prosperity, there were several hundred Indians labouring in its fields, and many thousands of cattle and horses grazing in its pastures. But its splendour has departed, and with it its usefulness. The Indians who were made comfortable on these premises, are now squalid and miserable. The fields are a waste! Nothing but the church retains its ancient appearance.—Pp. 109, 110.

The most interesting portion of Upper California in many respects, is the upper or northern, embracing the Bay of San Francisco, its tributaries, the Sacramento, San Joaquin, and Jesus Maria rivers, and the country bordering on these waters.

The Rio San Joaquin rises in a lake called Buenvista, situated in latitude 36° north, and about three hundred miles north-west of the mouth of the Colorado, and running in a north-westerly course nearly six hundred miles, falls into tide-waters at the eastern extremity of the Bay of San Francisco. This stream has a deep and tranquil current. Its waters are transparent and well-stocked with salmon and other fish. It is navigable, for small steamboats, about two hundred and fifty miles. A high range of mountains on the north-east, at an average distance of forty miles from the river, bounds its valley in that direction—and a range of hills, rather low in the north, but becoming lofty in the south, bounds it on the west, forming a prairie vale six hundred miles in length; nowhere less than forty, and often more than one hundred miles,

in width. This vast plain extends, indeed, with little interruption, from the Bay of San Francisco to the Colorado, gradually growing wider and wider, and more uneven in its surface, till it reaches that river. A space sufficient for an empire! A very large proportion of its surface is open prairie, covered with grasses and a species of wild oats. But it is so diversified by lines of trees skirting the streams, by wooded spots, standing out like islands on the green plain, by arms of timber stretching far down from the mountain sides, and by extensive circular groves, connected with larger forests by a thin fringe of trees—that the valley presents the appearance of a vast series of plains of every conceivable area and shape, from the little wood-bound plantation, to the township, the county, and the state. Over this immense plain rove innumerable bands of wild horses, mules, elk, deer, grisly bears, and other animals. The portion of the valley within twenty miles of the river is wholly uninhabited. The Indians do not feel disposed to live there, and the whites have plenty of room on the coast. There are large tracts of excellent tillage lands on the banks of the San Joaquin, and in the valleys of several beautiful tributaries coming into it from the eastern mountains; particularly in that of the Merced. But, generally, the valley of the San Joaquin will be found unsuitable for cultivation. Its soil is manifestly of volcanic formation, and filled with elements unfriendly to vegetation. On many extensive tracts the muriate of soda covers the ground like frost, and destroys, with equal certainty, every green thing; while other tracts, larger still, abound in asphaltum, which renders the soil too compact for tillage. These peculiarities, however, attach only to the plains. The uneven lands of the great valley, and of the smaller ones of the tributaries, and, indeed, all the swells, hills, and vales, that lie about the two ranges which bound the valley on the east and west, are sufficiently freed from these destructive ingredients by the wintry rains, which wash them down to the plains below. The face of the country among these highlands is very beautiful, the soil rich and heavily timbered, and above them rise the mountains bearing on their sides forests of red cedar trees, from one to twelve feet in diameter, and of proportional height. These grow to the northward of the latitude of San Antonio. Thence southward flourishes a species of white pine, of larger girth, loftier, and of finer grain, than can be found in the States. But of the central and flat portions of the valley I cannot speak so well. It contains, indeed, every variety of soil—as tracts of loose sand, hard-pan, gravel, rich loam, and ponds of salt, bitter, and fresh water. Most of the lakes, however, belong to the latter class, and the larger part of the soil furnishes pasturage. There are very many swamps or marshes here filled with *tules*, a large rush, ten or twelve feet high, and from one to two inches in diameter, having a bulbous and branched root, eight or ten inches long, and six or eight in

diameter. Willows, bushes, and a few shrubs of different species, grow over the plains. The cotton-wood is the only large tree found in the vicinity of the river.

The climate of this valley is its greatest misfortune. The wet season extends from November to March—five months of the year. During this period it rains without cessation for many days, and even weeks, and the low country being very flat, becomes a vast assemblage of lakes. In the month of April the dry season begins, and, save the heavy dews, there is nothing to moisten the earth for seven long, burning months. Mr. Kelly, an American gentleman, of great intelligence and enterprise, who travelled over this country at an early day, remarks, that "in crossing the prairies in latitude $38^{\circ} 30'$ north, during the month of August, I found that for several successive days the mercury ranged at 110° (Fahrenheit) in the shade, and sealing-wax, deposited in one of my boxes, was converted into an almost semi-fluid state." This intense heat, poured down so many months upon the submerged prairies, evaporates the water as the time advances, and converts the lakes formed in the wet season into stagnant pools of putrid water, which send out most pestilential exhalations, converting this immense valley into a field of death.

But this evil can be remedied. The San Joaquin lies so low as to allow these lakes to be drained into it. When, therefore, the country shall be properly ditched, the waters will not only flow off, but will bear with them much of those destructive salts which are now deposited upon the soil. And thus, I believe, the valley of the San Joaquin will become the abode of a dense population, the products of whose industry will float down the placid current of that river, to the great commercial marts of that and other lands.

This valley is now the great hunting-ground of the Californians. Vast herds of wild horses and elk are met with in all parts of it. The latter animal, the noble elk, is hunted by the Spaniards for his hide and tallow. These people go out in large companies, with fleet horses, and lasso them as they do the bullocks near the coast. The deer also, and antelope, are found here in great numbers, and are killed for the same purpose. The grisly bear inhabits the mountain sides and upper vales. These are so numerous, fat, and large, that a common-sized merchant-ship might be laden with oil from the hunt of a single season.

On the western side of the mouth of the San Joaquin, there is a vast tract of marshy land, and some hundreds of low islands in the Upper Bay, which are saturated by the tides. The usual ebb and flow at this place is about four feet—consequently this low surface is enriched every year by the sediment of the vernal freshets, and yields an immense growth of rushes. These grounds would probably make the best rice-fields in North America. The water of the tides is either entirely fresh or very slightly brackish—it may easily be let in upon the field at flood, and drawn off at ebb.

These Tuleras, as the Californians call them, those thousand isles, and those great rush wastes, will, it is believed, be the only rice-fields of any value on the Pacific coast of the continent. A noble and valuable vale is that of the San Joaquin—six hundred miles of prairies covered with grass and wild oats, cut by streams, shaded with lofty forests! Prairies, some ten, some twenty, others one hundred miles in extent, overhung by jutting promontories, crowned with gigantic forests, the wild grains, grasses, cattle, horses, leaping deer, the grisly bear, and the stately elk, tossing his antlers to the breezes, are elements of its present state. And we may expect when the ox treads the furrow, and the axe and the flail awaken their music on the plains, that the arable portions will be reclaimed and rendered fruitful, while the prairies will give sustenance to immense herds of domestic animals.

The Rio Sacramento is much larger than the San Joaquin, and its valley contains a much greater quantity of fertile land. The mouth of this river is a little north of that of the San Joaquin. Indeed, these two streams mingle their waters around a considerable island which lies before the mouth of each. They both enter the eastern extremity of the Bay of San Francisco, about seventy miles from the Pacific. It is two days' hard rowing from the mouth of this river to the junction of its two principal branches, called "the forks." At the mouth the soil is peaty, and overflowed by the spring tides. As you advance higher, where the tide has no influence, the soil becomes substantial, producing roses, arbutus, and other shrubs, most luxuriantly, as well as the wild oats and rye. These grains, resowing themselves from year to year, produce perpetual food for the wild animals and Indians. These plains are burned over every year by the Indians, and the consequence is, that the young trees, which would otherwise have grown into forests, are destroyed, and the large trees often killed. Nevertheless, the oak, the plane tree, of immense size, the ash, of an excellent quality, covered with the wild grape vines, fringe the stream everywhere, and divide the country into beautiful glades and savannas, which, when the leaves are fading, when the grape hangs in the greatest profusion on the limbs, and the deep red flowers of autumn dot the grassy fields, and birds sing their melancholy hymns to the dying year, give the finest picture that the mind can conceive, of a beautiful wilderness. The water of the Sacramento is very pure. Its banks, from the mouth to the forks, are entirely alluvial, a deposit of sand and clay. The bottom varies from a very loose mud, and quicksand, to a stiff red clay.

The forks lie in latitude $38^{\circ} 46' 47''$ north, and longitude $0^{\circ} 47' 31''$ east of Yerba Buena, near the entrance of the Bay of San Francisco. The stream is navigable for small craft to the forks in the dry season; in the rainy season, and during the early part of the summer, steam vessels of three hundred tons measurement can

ascend its eastern branch several hundred miles farther.

It is difficult to convey, by means of words, the exceeding beauty and excellence of this portion of the valley of the Sacramento. To one who has seen it, all attempts to do so must appear tame and uninteresting. I may say that the linear distance from the mouth to the forks is about sixty miles, and that the river, in making that progress, meanders one hundred and fifty; that for the most part of this distance, within the verge of the valley, grows a belt of oak trees, about three hundred yards wide, crowded with flowering vines and wild fruits, and interspersed with the lofty plane and other beautiful trees, variegating the scene; that beyond this belt, on either side of the river, stand clumps of forests, over the endless seas of grass, that reach away to the distant mountains; and that there are many mounds of earth on these great savannas, built unknown ages ago, by the Indians, from which to gaze over these surpassing regions, and to view in safety the rush of the spring-floods, covering the country far and near. And should I continue the attempt to lead the reader on, despite the certainty that he will not gain thereby the conception of it which I desire to convey to him, I might state that it is an open champain country, cut on the east side of the river by numerous beautiful tributaries, skirted with timber, and on the west dotted and striped with groves and lakes, and that this is one of the richest grazing and agricultural districts of the Californias. During the rainy season, the river rises from eighteen to twenty-four feet, and, overflowing immense tracts of prairies, produces a succession of beautiful lakes, through which its floods rush towards the Gulf. From the upper country are thus brought down great quantities of rich loam, which are deposited upon the lower plains, rendering them as productive and beautiful as the banks of the Nile. From ten to thirty miles distance from the river, the land begins to rise rapidly, the open vales creep up into the heights among brooks and forests, till lost in the wilderness of white, red, and yellow pine, and live and white oak, whose gigantic trunks stud the mountains to the regions of perpetual frost.

These branches of the Sacramento are strong dashing mountain streams. The eastern one rises among the Sierras Nevadas, or snowy mountain range, about three hundred miles east of Cape Mendocino, and has a south-westerly, tortuous course of nearly seven hundred miles to the forks. This is the largest branch of the Sacramento. It is navigable for small craft, as before observed, several hundred miles during the wet season, and will be very useful in floating down the valuable timber of its vales, and of the mountain sides, to less woody regions around the bay. A beautiful chain of open plains, with a rich soil, watered by numerous streams and rivulets, and skirted by the finest forests, extends the distance of seventy or eighty miles up this branch. At this point, in latitude $39^{\circ} 35'$ north, are the

first rapids. Here the traveller to and from Oregon fords the river in the dry season. The stream is here about one hundred and twenty yards wide, with four feet of water in the channel, and a swift current. In the winter and spring, the depth of water at this ford is ten or fifteen feet.

At this place commences the southerly slope of the Snowy Mountains, and the whole aspect and character of the country becomes still more beautiful and valuable. The soil on the hills is admirably adapted to the growth of forest trees, and the prairies wind among the wooded elevations, and along the banks of delightful streams, clothed with the richest and most varied abundance of vegetable productions, crowned with countless blossoms, and sending out on the air the most grateful perfumes. And these plains and wooded hills reach to the Snowy Mountains, where, in latitude 40° , there is an easy passage to the valley of Smith River. This portion of these mountains, lying on the track of our description, deserves especial notice.

A spur of rugged hills puts off here from it, and runs down southwardly between these principal branches of the Sacramento to its forks. These heights are manifestly of volcanic origin, and Mr. Kelly suggests, "that, as they abound in basaltic and vitrified stones, scoria, &c., they be called the volcanic range." Along their base stretches a beautiful chain of prairies, for seventy or eighty miles, watered by numerous rivulets. In this volcanic ridge, I found a stratum of earth which the Mexicans call *tepetate*, and which forms a cement, when covered by water, or buried so far below the earth as to retain moisture. It is so soft as to be easily penetrated by an iron bar, but it becomes as solid and impenetrable as a rock, on being exposed to the sun or wind. The general aspect of this range is rude and black. The minor hills are covered with dark-coloured iron-stones of all shapes, with sharp edges resembling clinkers in the arches of a brick-kiln, and with reddish clay and gravel, appearing like pulverized brick. It is the work of volcanic fires, and may properly bear the name which our worthy countryman has given it.

The western main branch of the Sacramento is nearly equal in size to the eastern. It discharges nearly as much water, but gathers it from less space. It rises among a lofty cluster of the Snowy Mountains, about thirty miles from the sea, and running in a south-by-easterly direction about two hundred miles, meets the other branch at the forks, with a generous flood of beautiful waters. The tributaries of this are not so large or numerous as those of the eastern branch, and the same may be said of the prairies that border it, but they are quite as charming. They stretch along by the rushing waters, among the heights, loaded with evergreen forests, like fairy paths of olden tales—rich, rich, glorious to behold—beauty reposing in the lap of the giant mountains, to whom the sounding streams give music, to whom the mountain-dews give jewels, and the wild-flowers incense. Were I to be exiled

from human kind—and cast off from the sight of woman, wife, and child—and deprived of the deep pulsations of joy which cluster around the holy altar of home, that old Saxon citadel of the virtues, I would pray for a cave in these heights, and among these streamy vales.

The timber trees on this part of the southern slope, as far northward as 40° , are worthy of notice. The white pine is very abundant, and of a large growth. Several kinds of oak are also plentiful, the most common of which is the *encina blanca*, white oak. Its average height is forty feet, its trunk six or eight feet in girth, with a profusion of branches, which grow together with the compactness of a hedge, and in perfect symmetry of form, like the rounded tops of an apple orchard. The live oak—*quercus virens*—is very abundant, and grows only on the highlands. Its diameter is usually from three to four feet—its altitude sixty or seventy. This timber is equal to any of the kind in the world, in solidity, strength, and durability.

But the noblest specimen of this tree found in the territory of the Sacramento, is the white oak proper, the *quercus navalis*. It grows on the river banks, and the low hills of the prairies. A fine tree it is, not only on account of its excellent qualities as timber, but for its lordly trunk, which one might almost say preserved a uniform diameter its whole length. And the actual fact is, that it not infrequently attains a girth of fifteen feet at ten or fifteen feet from the root, and the branches possess corresponding dimensions, and extend a prodigious distance horizontally from the stem.*

The Jesus Maria River is a small stream which rises at the distance of twenty miles from the ocean, among that part of the Snowy Mountains immediately south-west of Cape Mendocino. Its head-springs are among the perpetual snows of those highlands, and, flowing about three hundred miles, over precipices, and through prairies, it falls into the north-west part of the Bay of San Francisco. This stream, in its upper course, runs among barren rocks till its rivulets gather into a current of some magnitude, when it enters a forest region of pines, cedars, and other terebinthine trees, and lower down is bordered by oaks of various species, chestnut, hickory, walnut, oak, and plane trees.

This region, embracing the wide tract between the Sacramento valley and the sea, and between the Bay of San Francisco and the Snowy Mountains, is not less desirable than the country on the Sacramento. It is, however, very different. Instead of six or seven hundred miles of continuous plains and forests, with mighty streams coursing down to a common outlet, it is a country of hills and plains, rising one above another, northwardly, from the sweet prairies at the bay to the bare and lofty mountains in latitude 40° north. The portion in the vicinity of the bay, forty miles square, is chiefly prairie, broken by lines of

forest and woody ridges; the next forty miles northward, and of a like width, consists principally of extensive plains covered with various kinds of timber, and high precipitous hills, clad with forests of white pines, whose trunks vary from nine to fifty feet in circumference, and from one to nearly three hundred feet in height, hanging over little flowering prairies, among the groves on the low lands; noble columns of nature's architecture, supporting cone-formed capitals of growing, living green! A land of the wildest enchantment! The hooting owl and the cuckoo are there at midnight, and the little birds twitter to the babbling rivulets of the vales. Far reaching away to the north are piled the naked cold summits of the Snowy ridge. This is a vast slope of excellent land, which will, when subdued, equal any other in the world. The great Bay of San Francisco on the south, and the Bay of Bodega and the ocean on the west, give it a position as a farming and commercial district, which is scarcely surpassed by the valley of the Klamet, or of the San Joaquin and Sacramento.

Stretching across the north of these splendid regions are the Snowy Mountains. This range of highlands forms a natural boundary between the Californias and Oregon. But the ignorance of our negotiators with Spain, or their criminal neglect of duty, gave us the parallel of 42° north, instead of this noble barrier of craggy ice and snow. Consequently, the Californias extend beyond these mountains, and embrace the valley which lies between the Snowy range and a spur of the President's range, which puts out westward from Mount J. Q. Adams, in latitude $42^{\circ} 10'$. The average height of these hills is about 2700 feet above the sea. This vale is about fifty miles wide, and one hundred in length. The Klamet River waters it. This stream has two principal sources—the one among the snows of Mount Monroe, in latitude $43^{\circ} 20'$, and about one hundred miles from the sea; the other in a beautiful mountain-lake, with a surface of about two hundred square miles, lying further south. Both these branches are furious mountain torrents, tumbling down lofty acclivities, into little valleys, where they run a few miles with a comparatively peaceful current, and then dash and roar again over another precipice, and so continue till they reach their confluence. Thence the Klamet moves on with a heavy, whirling flood, until within thirty miles of the sea, where it breaks tumultuously through a range of high hills, and meets tide-water, and thence proceeds in a north-westerly direction to the ocean. The aspect of the country lying on this stream is singularly charming. The mountain sides on the south rise gradually, and on one-third of their elevation are clothed with forests of pine, cedar, and other evergreens. The overtopping peaks shine with drifting snows. The highlands on the north are generally covered by trees, with rugged crags beetling out over their tops; and, at intervals, conical peaks arise, in some instances in clusters, and in

* Kelly.

others in solitary magnificence, over the lower hills. These peaks are frequently very beautiful. Their form is that of the frustum of a cone; around their bases are green forests; on their sides hang the dwarf cedar tree, pendant in the air; on their very top, in the cold season, is a cap of snow; and down their steep sides murmur little brooks. The largest of these peaks lie, however, to the eastward, in the President's range. The most conspicuous of these is Mount Jackson, in latitude $41^{\circ} 40'$ north. This is the highest elevation in the range to which it belongs, rising nearly 17,000 feet above the ocean, in great abruptness, grandeur, and beauty of outline. Its base rests among deep, evergreen woods, and it is girdled higher up with shrubs and hardy plants, to the region of frosts, and there commence the sheeting snows which spread wide and high its vast head with the desolation of eternal cold. The pathway between Oregon and the Californias passes near it.

The valley itself is a rolling, irregular, inclined plane, broken by forests and isolated hills. The latter spring oftentimes in the midst of the prairies, like immense haystacks, several hundred feet high, some in clusters, and others solitary. These sometimes occur in the forests, and, in such cases, they are often castellated with basaltic rocks, presenting the appearance of ruined castles. The trees of the Klamet Valley consist principally of the same various species of the oak which grow on the other side of the Snowy ridge. There is one tree here also in great abundance, which does not prevail on any other part of the north-west coast, a species of *myrtus*, the largest of which measure twelve feet in girth and one hundred feet in height. All its leaves, wood, and fruit, are strongly aromatic, yielding an odor like *myrtus pimento*,* and producing sneezing, like pepper. The fruit is large, globular, and covered with a fine green skin, enveloping a small nut with an insipid kernel, which the squirrel eats with a great relish. So fragrant is this tree, that when the groves are moved by the wind, a delicious perfume fills all the surrounding air.

The soil on the open plains of this delightful vale is very rich; and, since the climate is most salubrious, as well as most favourable to vegetation, this valley will hereafter become one of the most enchanting abodes of man. Indeed, it would be difficult to decide whether to prefer this or the vales on the south side of the Snowy Mountains, were it not for that unrivalled Bay of San Francisco, which connects the land, whose streams flow into it, with the commerce of the world, more largely and intimately than the Klamet can do. In fact, this river is both too rapid and too small for ship navigation, and the depth of the water on the bar at its mouth being only two and a half fathoms, it will, of course, never furnish a harbour suitable for extensive maritime trade. But it is a sweet valley for the growth of a happy and enlightened population; a lovely

spot, where the farm-house, that temple of the virtues, may lift its rude chimney among the myrrh trees; where the wife, faithful in her love to her husband, and true to all the holy instincts of the mother, shall offer her pure heart's undivided devotion at the altar of HOME! HOME! that only refuge of man from the toils and pains of the outer world; that sanctuary, the desecration of which turns his heart to flint, and his affections into fountains of gall.

The valley of the Klamet will be lighted from the hearths of happy homes ere long, and will be densely peopled. Sixty miles square of productive soil, surrounded with every beauty of mountain and forest, sprinkled with sweet groves, and threaded with streams of pure water, all under a genial climate, render it a magnificent site for the dwellings of man.

As we pass southward in our geographical view of the Californias, we find remaining to be described, that belt of country extending from the Bay of San Francisco, in latitude 37° north, to the port of San Diego, in latitude 32° north, and bounded east by the marine range of mountains, and west by the ocean. It is three hundred and fifty miles long, and from fifteen to forty miles wide.

The general aspect of this region is that of an open country, varied by patches of trees of noble growth, and with lines of the same along the streams. The northern half of it consists of rolling, alluvial plains, without rock or stone, traversed by low mountains of porphyry, basalt, and jasper, partially covered with pine, cedar, and oak forests. The plains between these highlands are well watered, and of a rich, enduring soil. The southern half of the region is somewhat more broken by the mountains, and is not so well supplied with trees and streams. But there are many very large tracts of rich plains, covered by forests of live oak and other valuable trees, and numerous broad prairies, with a pliable and inexhaustible soil. Perhaps I ought to say that this is, indeed, the most valuable part of the Californias; and true it is, that this belt of country, lying between the latitudes thus named, is the crowning glory of Upper California, as will appear on coming pages.

For the space of seventy-five miles northward from the Cape of San Lucas, the air is moistened by the vapours of the sea, and the exhalations from many parts of the ground. The earth is watered by numerous little currents running among the hills, and clothed with tropical vegetation. From this point, seventy-five miles north of the Cape, to the latitude of Loretto, are high, craggy mountains, and a barren soil, the mere cinders of volcanic action. On account of the increased distance of the interior from the sea and the gulf, and the absence of streams of water, the heat is excessive—as great as in Arabia, or Sahara. A few sunken vales, separated from one another and the world by vast tracts of burnt heights, enjoy the cooling influences of shady trees and springs of water. And along the coast, the sea-breezes, and some small

* Douglas.

streams, bursting from the barren mountains, give some humidity to the atmosphere in several places, and scent it with vegetation. But these are only unimportant qualifying circumstances to the general fact, that the sun heats that lofty belt so fiercely that vegetation refuses to grow, and water to run, it is so soon swallowed by the thirsty earth or evaporated by the parched air. From the latitude of Loreto to the latitude of San Diego, 33° north, the air becomes milder. In the mountains, although they are not so high and rugged as those farther south, the temperature is sometimes so low in winter as to produce frost; and on the coast there is an increase of humidity. Between the mouth of the Colorado and the Pacific, there is a region of very delightful climate. The mountains increase in height, and among them are many beautiful plains, watered with abundant springs and brooks, and interspersed with many pleasant woodlands, which together render the air charmingly temperate.

In the country between the Gila and the Colorado, there is a great variety of temperature. From the junction of the two rivers, for the distance of two hundred miles up the Colorado, and about one hundred up the Gila, the climate is exceedingly hot in summer, and in winter rather frosty. The generally sandy and barren soil, and a vertical sun, produce the one, and the contiguity of frozen mountains the other. The valley of the great Salt Lake is very hot and dry. Some few small streams, and the partially fertile tracts lying on their banks, and the neighbourhood of the Snowy Mountains, and the vegetation at their bases in the south-west, modify this description somewhat; but, generally, this great basin of former volcanic fires has a dry and sultry climate.

The valley of the San Joaquin and its extension toward the head of the Gulf of California is exceedingly hot and sultry. The marine range on the west effectually prevents the sea-breezes from reaching it; and if any other winds are active, the monotonous level of the northern portion, the short, sharp sand-hills of the southern, and the long lines of wood which encircle the prairies, and fringe the streams, prevent their circulation, and produce there, in a high northern latitude, all the heat and consequent discomforts of the torrid zone.

The climate of the valley of the Sacramento is exceedingly various. Near the mouth of that stream, and northward eighty miles, to the forks, the heat of the summer sun is intense, but is much modified by occasional showers, and the humid breezes from the Bay of San Francisco. Higher up, among the narrow prairies, along the banks of both forks and their tributaries, the dashing of cascades, the shading influences of lofty and wooded mountains, and the rich carpeting of a luxuriant vegetation, produce a temperature, than which a more desirable cannot be found in any country. An incomparably fine soil, nestled in long and delicately curved lines among scene-

ry of the wildest mountain east, with water from the overlooking snows and glaciers, and fanned by air which can claim kindred with that of Italy, or Greece, is a collection of excellences which are found, I believe, on that spot alone in North America. The climate of the territory lying between that just described and the sea, and for forty miles around the Bay of San Francisco, is equally fine, with the exception that heavy fogs press up from the Bay and the Pacific, during a portion of the summer months. But this is to be deemed rather a good than an evil—for moisture is thereby distilled over the thirsty ground, during the dry season, and the breezes which bear it over the land come freighted with the cooler atmosphere of the sea, to temper the air, and render it more healthful and agreeable.

The climate of that portion of the Californias which lies between the marine range and the sea, has called forth expressions of admiration from every traveller in the country since it was discovered. But in order to give a clear idea of it, we will speak of it in detail. The intense heat of summer begins in the month of June, when every leaf of herbage south of Monterey is dried to a cinder. The fogs generally moisten the coast to the north, and keep it green.

On the coast south of Monterey, the thermometer sometimes rises to 108° or 110° Fahrenheit, in still summer weather; but usually the sea-breezes keep it down to 70° and 75°. North of Monterey, the fogs always accompany the hottest weather, and modify its temperature.

Some few points on this coast are visited by disagreeable sea-winds. But these places are small and few in number. And yet this is doubtless as fine a climate as can be found. No causes of disease exist here.

The agriculture of Upper California is as yet confined to the region lying between the marine range and the sea, and is chiefly carried on by the converted Indians at the Missions. And when we inform the reader that the mode of cultivation has not changed since the first settlement of the country, its rude and unskilful character will be easily understood. A few statements, however, may make it more manifest. When a field is brought under the plough, it is planted with the same crop, as oats, or wheat, &c., until it is exhausted, and then permitted to lie waste, until it acquires the power to produce the same crop again. Alternation of crops is deemed a heresy always to be avoided.

The grains raised in the Californias are, maize, (Indian corn,) oats, wheat, and barley. Peas, and a small bean called *frixole*, are also cultivated. Maize is the staple bread corn of the country. It is cultivated in drills, and, even with the little skill used in raising it, produces abundantly. Wheat is sown broadcast, as with us; and, strange to tell, such is the loose and rich quality of the soil, that the seed which falls at the harvesting of the first crop, yields, without the aid of plough

or harrow, two-thirds of a crop the second season, and half a crop the third. My friend Dr. Marsh, a resident on the banks of the Rio Sacramento, and intimately acquainted with the Californias for the last fifteen years, writes the author thus: "The southern parts of Upper California are generally too dry and warm for the successful cultivation of wheat; tolerable crops, however, are raised. But from Monterey northward, and particularly in the vicinity of San Francisco's Bay, most extraordinary crops are raised with very negligent cultivation. It is not uncommon to make two, three, and even five crops from only once sowing. The average annual yield is from thirty to fifty bushels from one of seed sown. In one particular instance, in which something more than ordinary care was used, and of which I was an eye-witness, from ten bushels sown, three thousand six hundred and fifty-two bushels were harvested." Barley and oats, the latter more especially, since their introduction, have spread very widely over the plains, and are now seen everywhere growing without culture most luxuriantly, and in immense tracts. Maize returns about one hundred and fifty fold. In Lower California, these grains can be raised only in localities which can be irrigated. In 1839, the harvested crops of grains in Upper California amounted to 69,000 bushels of wheat, 22,000 of maize, 3,000 of *frijoles*, 15,000 of barley, 700 of peas. When an intellectual and industrious race shall plough that soil, and harvest its generous crops, the Californias will become the granary of Western America.

The Irish and the sweet potato have been introduced by American settlers, and thrive remarkably well. Cabbages, turnips, and other garden vegetables, have not yet been tested. But no doubt can be entertained that these would grow as well as any other plants.

Hemp and flax have been tried, and prove congenial to the climate and soil.

But the grape will undoubtedly be the great staple product of the Californias. It is now considerably cultivated. On this subject, my intelligent friend, Dr. Marsh, writes thus: "Nearly the whole of the Californias is well adapted to the cultivation of the vine. I have been assured by Mons. Louis Vignes, a native of Bordeaux, France, that the soil and climate of California are superior to any part of France for this kind of culture. The competency of this gentleman to decide on the subject is most satisfactorily proven by the large fortune he has made at this same business here in the short period of six years, although his vineyard has not yet come to maturity. The olive tree also flourishes exceedingly well. Figs, lemons, and oranges, are common south of Monterey, and produce abundantly all the year. North of that point, figs are very productive and excellent, but we get only one crop a year. Cotton and tobacco also thrive finely."

Rice may be raised in untold quantities about the waters of the San Joaquin and Sacramento. The immense fresh water marshes

about the mouths of these streams are capable of being turned into fields for the production of this grain, at a very trifling expense. Indeed, it may be confidently asserted, that no country in the world possesses so fine a climate, coupled with so productive a soil, as the seaboard portion of the Californias, including the territory on the Bay of San Francisco and the Rivers San Joaquin and Sacramento. But its miserable people live unconscious of these things. In their gardens grow the apple, the pear, the olive, fig, and orange, the Irish and sweet potato, the yam and plantain, most luxuriantly, side by side; and yet they sleep, and smoke, and hum some tune of Castilian laziness, while surrounding nature is thus inviting them to the noblest and richest rewards of honourable toil.

But, this idleness notwithstanding, the Californians are rich—rich in the most luxuriant wild pastures, and the cattle, mules, horses, and wild animals that feed upon them. The immense number of these animals, in the time of prosperity among the Missions, may be gathered from another extract from Dr. Marsh's letter: "Some of the Missions were formerly possessed of great wealth. For several years during the civil wars of the Mexican Revolution, no vessels of any kind visited this coast, and both the Missions and private families were obliged to rely entirely on their own resources for supplies of every kind. And when the ships of Boston, after the wars had ceased, began to visit these shores again, for hides and tallow, such quantities of these articles had accumulated, that the single Mission of San Gabriel purchased several successive cargoes of cloths and groceries, at about one hundred thousand dollars each, and paid for them in hides and tallow. This Mission at that time possessed over one hundred thousand head of neat cattle, and great numbers of horses and sheep. The vineyards produced between two and three hundred barrels of brandy annually, and wine enough for the consumption of the Mission, and for the purposes of the unbounded hospitality which then pervaded those establishments."

"The Indian population of the Mission at that period was three or four thousand. At present it is from one to two hundred, and the flocks and herds are hardly sufficient to support them. The same remark will apply, with little variation, to all the Missions of the Californias. They are mere skeletons of what they formerly were. San Josef is the only exception. This still has a population of about fourteen hundred souls, twenty-five thousand black cattle, nearly the same number of sheep, and considerable bands of horses, mules, &c."—p. 326—345.

The seaward coast of the Californias, extending through twenty degrees of latitude, has only two good harbours. There are, indeed, very many roadsteads and bays, where vessels anchor with considerable safety, and take in and discharge cargoes, but they are all exposed to some of the prevailing winds. The

only well protected harbour is San Diego, lying in latitude $33^{\circ} 17'$ north. This is landlocked—without surf, with a smooth, hard sand beach, and free from rocks and stones. But it is much less in extent, and far less valuable to commerce, than the Bay of San Francisco.

The Bay of San Francisco is the glory of the Western World. Its mouth lies in latitude $37^{\circ} 58'$. The water on the bar is eight fathoms at low tide. The mountains on either hand rise several hundred feet above the sea, and form fine landmarks in foggy weather, to point out the bar, and the channel into the harbour. The capes at the ocean's edge are about two miles apart, always verdant and refreshing to the eye; and, as you go up the passage, the little streams tumbling from the rocks among the greenwood, and the wild game, standing out on the cliffs, or frolicking among the brush, and the seal barking in the water, give promise of pleasure and rest from the toils of the sea.

This passage is about five miles in length. Four and a half miles from the capes it narrows considerably, and presents a bold point north and south. On the southern one stands the Presidio, or fort, on which this mighty harbour condescends to depend for protection. The fort is in ruins. A dozen old rusty guns, in the care of thirty or forty half-clad, half-breed soldiers, usually foraging in squads of five or ten among the neighbouring Missions; one side of its walls tumbled down, and another strongly disposed to plunge into the sea, and not the tenth of a true soldier's heart beating for a hundred miles around, is a true summing up of its present strength.

The house of the commandant, situated in one corner, is a respectable white-washed pile of mud and bricks. On the other corner of the same side is the chapel, also built of mud—a filthy place for worship. On another side are artificers' shops and a prison.—Pp. 352, 353.

Six miles from the capes at the mouth, and at the point where it begins to open into the bay, are two small islands, on which forts might be conveniently built that would command the narrows, and also the entrance into both the north and south parts of the bay. Indeed, the whole bay is so studded with islands, easily fortified, and so overhung by headlands, which of themselves are fortresses, that a party in possession of them could hold the bay against vast odds, and in comparative security. From the narrows to the northern point of the bay is twenty-four miles, and to the south-eastern point thirty-five miles.

The southern half of the bay varies from fourteen to fifteen, the northern half from four to twenty miles in width. In every part of this large tract of water is good holding ground, and on all its shores are coves in which vessels of any tonnage may lie snug and secure from storms, within a cable's length of the land. In the north-west corner of the bay is the inlet of the Rio Sacramento. It is about one and three-fourth miles wide,

for the distance of seven miles, and then spreads out into a bay seven miles wide and twelve in length, when it narrows down to four miles, for the distance of two miles and a half, then widens to seven or eight miles the distance of eleven miles, with islands in the centre, then narrows to four miles for the distance of three miles, and then it widens into a bay about twenty miles north and south, and about the same distance east and west, studded with nine islands. On the east of it, between the mouth of the Sacramento and the bay, lies one about fifteen miles in length, north-east and south-west, and of a breadth varying from three miles to ten. All these islands are low and marshy. On the southern point of this large island comes in the Rio San Joaquin, and on the northern point of it is the northern mouth of the Sacramento.

On the south side of the promontory on which stands the fort Castillo de San Francisco, is a little village called Yerba Bueno.—Pp. 353, 354.

The surpassing beauty and magnificence of this harbour of San Francisco can never be properly estimated by being viewed from the land. One must approach it from the sea—have a full view of the lofty shores north and south, rising at intervals into lofty peaks, girded at their bases with primeval forests of evergreen cedars and pines, mottled with the boughs of the oak, the ash, and the plane. The bar which springs from the northern headlands of its entrance, and, running beneath the blue waters of the Pacific, from five to nine fathoms, causes a belt of surf to roll across the mouth, must be passed. A breeze must bear your bark over and along the dangerous rocks three-quarters of a mile inside on the right, quarrelling with the surges, and onward four miles between the projecting cliffs, overhanging peaks, and verdant woodlands, filled with starting deer and other game, to the harbour at the narrows beneath the fort; and thence onward still, past the fort and the islands lying across the entrance, and the bay is seen!—a broad sheet of water stretching off, north and south, and the largest and best harbour of the earth, surrounded by a country partly wooded and partly disposed in open glades and prairies of the richest kind, covered with the flocks and herds of the Missions, and deer, and elk, and bears. And amid the beautiful hills of the south and east are Santa Clara, El Pueblo San Jose, and Mission San Jose; and on the southern peninsula, five miles wide, is San Francisco, Yerba Bueno, the trading-house of the Hudson Bay Fur Company, the Presidio and the Castillo; on the northern peninsula is San Rafael, and in the north San Francisco Solano; a group of beauty and grandeur that knows no superior in any clime.—P. 355.

ANIMALS.—*Ursus Americanus*, the Black Bear, is an inhabitant of many parts of California, and is too well known to most readers to require a description. In its habits and appearance it differs little from its brethren of the north.

Ursus Arelus v. *Americanus*, Barren Ground Bear.—This is probably a variety of the first mentioned species, from which it differs in its lighter colour, being a dusky brown. It resembles, in appearance and habits, particularly in the nature of its food, which consists to a great degree of fish, the brown bear of Norway. Much confusion has been produced by confounding this with the next which we shall mention, and which is now well recognised as a distinct species.

Ursus ferox, the Grisly Bear.—This is the largest, most formidable, and most remarkable wild animal of the country. Numerous and almost incredible are the stories related of its ferocity and strength. Specimens are to be met with measuring four feet in height, and weighing from five hundred to one thousand pounds. Unlike the black bear, this species never climbs trees. His habits are solitary, and though an ugly customer to meet, he seldom becomes the aggressor. Although flesh is his favourite food, yet when that is not attainable he will eat vermin, berries, and roots, in digging for which he frequently overturns fallen timber which a yoke of oxen could scarcely move. It is seldom that the Indians, with their imperfect weapons, venture to attack this formidable animal, and whenever one is killed by them, the occasion becomes a matter of great rejoicing, and the fortunate victor is ever after held in great estimation by his comrades. A steak cut from the haunch of the grisly bear, and roasted on a stick by a camp fire, is by no means despicable fare, and the skin forms a most comfortable couch for the hunter.

Ursus maritimus, Polar Bear.—This great inhabitant of the frozen regions is not properly a Californian animal, though there is no doubt that he sometimes makes his appearance on the extreme northern coast, being floated southward on his own peculiar and original conveyance, a cake of ice.

Procyon lotor, Raccoon.—This well known animal is found in many parts of California.

Meles Salicivora, American Badger.—This species inhabits the northern part of California, as well as the plains of Missouri and those near the Rocky Mountains, north to the Peace River. It burrows in the sand, and is well calculated for its mode of life, being very strong in the fore feet. It is entirely different in aspect and size from the European species.

Gulo huscus, the Glutton, or Wolverine.—This peculiar animal, which partakes of the nature of the bear, the fox, and the weasel, is well known to the beaver trappers, by the constant annoyance to which it subjects them in devouring their baits and destroying their traps. It is a savage, sullen creature, and though from its size not formidable to man, it preys upon small animals. Stories have been often repeated, of the manner in which the wolverine entraps the deer, by climbing to a branch of a tree, and letting down moss, upon which the unsuspecting victim stopping to feed, is immediately mounted by the glutton, which, fixing his claws and teeth in its back,

maintains his hold till the lacerated and terrified animal falls and offers a delicious meal to its destroyer.

Mustela vulgaris, Common Weasel, and *M. erminea*, Ermine, are both found in various parts of the Californias. *M. vison*, the Mink, *M. martes*, the Martin, *Mephitis Americana*, the Skunk, are also inhabitants of this country, in common with nearly the whole American continent.

In many parts wolves are very numerous. Several species are met with, of which the *Lupus Americanus*, Common Wolf, is perhaps the most numerous. The others are, *L. griseus*, Gray Wolf, *L. nubilus*, Dusky Wolf, and *L. ater*, Black Wolf, with their varieties. The *Canis latrans*, Prairie Wolf, is also found here.

The natives have a very miserable, dirty species of cur, which appears to be about half domesticated, resembles its parent-stock, the wolf, and is quite useless, except to devour provisions and fight flies.

The *Canis (vulpes) fulvus*, Red Fox, and the *Canis cinereo-argentatus*, Gray Fox, are common. These are the only ascertained species which are met with, and it is probably a variety of the latter which is described by Douglas as being plentiful on the Multnomak, and which he absurdly states is in the habit of climbing trees.

There are probably more than one species of the cat tribe remaining undescribed by naturalists, in the countries of the Columbia and Sacramento. This opinion is expressed by Douglas. The ascertained species are the following: *Felis concolor*, the Cougar or Puma, often called "lion" by the inhabitants, a well known and very savage and formidable animal. It is confined mostly to the deep forests and thickly wooded sides of the mountains, and preys on deer and other animals. *Felis Canadensis*, Northern Lynx; *Felis fasciata*, Banded Lynx, or Tiger Cat; *Felis rufa*, Red Lynx, comprise all the described varieties found in the Californias. The latter is a timid animal, and may easily be captured with the aid of a dog, and a club, or almost any other weapon.

In the Sacramento and San Joaquin Rivers, as well as on many parts of the coast, the *Phoca vitellina*, Common Hair Seal, is abundant, and follows the track of the salmon.

Castor fiber, the Beaver, and *Fiber zibethicus*, the Musk Rat, are common in some parts of the country; and the former is numerous at the mouths of the Sacramento and San Joaquin Rivers. The beaver is well known to naturalists, for the remarkable skill and industry which it exhibits in the construction of its habitation, and the general sagacity and intelligence of its character. For this reason, as well as on account of the value of its skin, as an article of commerce, and the employment which its capture affords to many enterprising and bold men, some account of its haunts, and of the means used in obtaining it for purposes of trade, may not be uninteresting. Near and about the mouth of the Sacra-

mento, as before observed, lies a wide extent of low land overflowed by the tide, and including some hundreds of small islands, covered with an enormous growth of rushes. There is probably no spot of equal extent on the whole continent of America, which contains so many of these much sought for animals. For the last fifteen years the Hudson's Bay Company have annually sent hither a company of from fifty to one hundred trappers, who have each year taken from this spot alone from five to ten thousand of these valuable skins. It is said by hunters well acquainted with the whole Rocky Mountain region, that they have never seen anywhere else such large and fat beavers. On account of the scarcity of the timber of which their huts are generally constructed, the beavers, like true philosophers, have here accommodated themselves to circumstances, and build their habitations of rushes, curiously and skilfully interwoven. Notwithstanding the immense conscription drawn from their families by the hunters, their numbers as yet do not sensibly diminish. The very large size of the skins obtained from this place, causes their value to be greatly enhanced. The probable worth of each skin, after it is prepared by the hunters for exportation, is about three dollars; and reckoning the average number at eight thousand, we may arrive at an approximation to the great importance of this single locality to the Hudson's Bay Company. The quality of the fur, however, is hardly so fine as that which is taken in a more northerly region.

Cervus alces, the Moose, is found in all the woody and mountainous regions on the Columbia, and is abundant farther southward, near the coast. This noble animal, the largest, heaviest, and stateliest of the deers, is peculiarly worthy of mention. In size scarcely inferior to the horse, with his huge palmated horns stretching three feet on each side of his head, his long legs and racking gait giving a singular and grotesque air to all his movements, the moose is perhaps the most remarkable inhabitant of the country. Over level ground, and when unimpeded by bushes, or by snow, his speed is superior to that of the swiftest horse, and the cracking of his joints and hoofs can be heard almost as far as his form can be seen. In fact, it is only when a deep snow covers the ground that the capture of the moose can be well effected. When this is the case, the expert hunter, with his snow-shoes and his dogs, becomes more than a match for the moose, with all his desperate efforts to escape. A day is generally selected after a deep fall of snow has been followed by a slight rain, which forms a crust on the surface. The poor moose, whose great size and weight are here of the utmost disadvantage to him, is hindered in his flight by breaking through the crust, which cuts and bruises his legs, and, sinking into the snow, soon becomes exhausted; while the lightness of the dogs, and the snow-shoes of the pursuer, bear them forward in safety, and soon the crack of the unerring rifle tells that the noble game has

met his fate. The tongue of the moose is considered a great delicacy by the hunters, and his skin and horns are also of great value. This animal, when full grown, is from twelve to fourteen hands high, and weighs from five to nine hundred pounds. Its colour is a dark grayish brown, fading into white or light fawn colour on the belly. The head is large, the eyes peculiarly prominent and bright, and the horns, which are thrown back on the shoulders when the animal is running, will weigh from twenty to forty pounds.

The moose must not be confounded with another species which, though it is totally distinct, is yet often called by the hunters, "gray moose." This is the Elk proper, also known as the stag, red deer, wapiti, &c., the *Cervus Canadensis* of naturalists. The elk is an inhabitant of the plains, particularly in the valleys of the San Joaquin and other rivers, where immense herds, sometimes of many thousands, often congregate. The importance of the elk to the Indians, as an article of food, leads them to adopt many ingenious devices for his destruction. One of these is interesting. The Indian has prepared an elk skin, with the head and horns in their natural condition. After surveying a herd of his intended victims, who are quietly feeding on the plain, he gets stealthily to their windward side, and, after crawling, sometimes on his hands and knees, to escape their keen observation, as near as he thinks possible, and if practicable, screening himself behind a skirt of bushes, he puts on the prepared skin, and emerges from his hiding-place, with his bow and arrows under his arm. As soon as he is sufficiently near for his purpose, and sometimes the unsuspicious animals will allow him to approach almost into the centre of the herd, he fits his arrows to his bow, and fires away right and left, as fast as the shafts can be discharged, and before the victims have recovered from their astonishment the plain is strewn with the wounded and dying.

Another method of taking this animal is by means of snares, made of a tough kind of grass, which are set on their places of resort. The elk is considerably less in size than his gigantic relative, the moose, and his figure and general appearance are quite different, being much lighter, and more slender, and resembling more nearly the common deer. The legs, like those of the whole family, are long and slender, the tail short, the horns long and much branched, the colour a decided gray, often with a mixture of brown.

Several other species of deer are found on the Grand and Sheetskadee rivers, and in various other parts of California. The *Cervus macrotis*, Black-tailed Deer, is a handsome animal. Its size is about that of the common deer. The colour is bluish gray on the back, and fawn colour on the belly. The ears are curious, being as long as those of an ass, and the tail is short and black. Another very small and pretty species is the *Cervus leucurus*, Long-tailed or Jumping Deer, the *chevreuil* of the hunters. This is gray on the back, and

pure white on the belly, and is remarkable for having a tail from twelve to eighteen inches in length.

Antelope furcifer, the Pronghorn Antelope, is a very pretty and delicate species. It is not generally abundant, though in some localities it may be found in considerable numbers. Its extreme shyness renders its capture a matter of great difficulty. It presents a very graceful appearance when bounding up the sides of almost inaccessible rocks, and the hungry traveller is often tantalized with beholding it standing in perfect safety on a far-off cliff, while his utmost endeavours to get it within range of his rifle are perfectly futile.

Ovis montana, the Mountain Sheep, or Argali, is another peculiar animal. Its habitation is on the loftiest and coldest mountains, among the most tremendous and impassable precipices. In general figure it much resembles a large sheep of the domestic kind, but its horns seem out of all proportion to its body. These are from two to nearly three feet in length, are deeply ribbed, and curve backwards. Their weight on the male is sometimes thirty pounds. The covering of the body can scarcely be called wool, being a kind of coarse, short hair, of a dingy brown colour. It is called, by the voyageurs, "*Mouton gris*," and the flesh, though rather dry, is very good. The mountain sheep appears to have early attracted the attention of travellers, and is described by Padres Piccolo and Salvatierra under the Californian name of Taye. The horns of this species are manufactured into spoons, and various other useful articles.

Bos Americanus, the Bison, so well known to the western hunters, and so numerous on the prairies between the Rocky Mountains and the United States, can hardly be considered a Californian animal. That it once inhabited the country, there can be no doubt, but probably in consequence of the great and singular change which has converted the interior from a rich and fertile plain into a desolate waste, the bison has receded, and is now only to be found, and that in small numbers, on the extreme eastern and northern border.

Lutra marina, the Sea Otter, and *Lutra Brasiliensis*, the Land Otter, are found in many parts of the country. The former is abundant in most parts of the whole coast, and at the mouths of the rivers. This is perhaps the most valuable fur-producing animal of the country, and its skin is much sought after by the Russians for the purpose of adorning the cloaks and state robes of the nobility. The fur is of a velvety brown colour on the back, and sprinkled with black and silky hairs, and the lower parts of the animal are of a rich silvery gray. The sea otter is from five to six feet in length, and weighs from thirty to forty pounds, its body being of very slender proportions. The hinder legs are very short, the tail short, broad, and paddle-shaped. The colour varies at different periods of life; when very young, the fur is thin and scanty, and the skin principally covered with brown hair; from this period till full grown, the colour is nearly

black, with many hairs tipped with white, and the face, throat, breast, and sometimes the entire belly, are yellowish white, or very light brown. The fur gradually increases in thickness, and length, until the animal attains its growth, when it assumes the rich brown of maturity, which in extreme age becomes a chestnut, or even a perfect yellow colour.

The sea otter lives sometimes in families of considerable numbers, on the sea-washed rocks, and mostly in the water. It frequently rises to the surface, and utters a hoarse snapping bark, like that of an angry dog. It feeds on fish, and brings forth its young in holes dug in the sand. The skins are worth from \$50 to \$100 each. The shores of California would furnish from 20,000 to 30,000 annually.

Of rats, mice, marmots, and squirrels, there are numerous species, only one or two of which seem worthy of notice. The common rat, the black rat, and two or three different kinds of mice, are found in great numbers in many places, and their depredations are sometimes very disagreeable. *Pseudostoma bursarium* (?) the Pouched Rat, and the *Arctomys Beecheyi*, Small Marmot, are curious little creatures. The latter is exceedingly plentiful in the plains near San Francisco and Monterey. It is a very sprightly animal, somewhat larger than the common rat, of a fine brown colour, and constructs its burrows with much skill, carrying in its capacious cheek-pouches a store of nuts, corn, and acorns, for its winter's food. The species of *Arctomys* are numerous, and some of them probably undescribed. Of ascertained species may be mentioned, *A. ludovicianus*, the well-known and very pretty Prairie Marmot, sometimes called Gopher, which, however, is not found far to the west, and *A. monax*, the woodchuck. Of squirrels, there may be observed, *Sciurus cinereus*, the gray, *S. niger*, the black, *S. macrourus*, the great-tailed, besides *Pteromys alpinus* (?) the flying squirrel, and a species of *Tamias*, Striped Squirrel, or Dormouse. Of hares there are several fine species, one weighing from eight to twelve pounds, probably *Lepus glacialis*; another is *L. Virginianus*, the Prairie Hare, and also *L. princeps* (?) the Little Hare, which is only about six inches in length.

BIRDS.—Worthy of mention among the first of the feathered family in California, is the Great Vulture, peculiar, probably, to this country. Let his name be given in full—a lofty and sonorous one, and well fitting its owner—*Sarcorhamphos Californianus*! Second only to the huge Condor of South America in size, and closely allied to him in many respects, this remarkable bird deserves particular notice. The great vulture is met with along the whole Pacific coast, from Lower California to the most northern boundaries of Oregon and the Russian possessions. Solitary in its habits, rapacious in its appetite, enormous in size, and singular in conformation and appearance, it seems to hold the same position in the scenery of this country as its

celebrated European congener, the Lammergeyer, in that of the Alps. It builds its nest among the woody districts of California, on the tops of the highest trees, in the most inaccessible parts of the mountain valleys. It is very wary and difficult of approach, except while on its nest, or after a meal, when its whole nature seems to be changed, and it is so overcome by the inordinate indulgence of its appetite, that it may be knocked on the head with a stick. Their food is carrion, and, in common with others of the vultures, the carcase of a dead horse, or other animal, becomes their gathering place. The great vulture measures, when full grown, and in perfect plumage, about four feet eight inches in length, from the point of the beak to the end of the tail, and from nine feet six inches to ten feet from tip to tip of the wings. The colour is a uniform brownish black; the bill, and skin of the head and legs, yellow. The quill feathers are much esteemed by the hunters and boatman, for making tubes to their pipes.

Cathartes aura, the Turkey Buzzard, so common in the Southern States, is rather a rare bird in California. Its habits are well known. As a scavenger it is of great benefit to the inhabitants of the places which it frequents. A dead hog or sheep lies only long enough to emit the odor so grateful to the nostrils of this filthy bird, before it is devoured entirely out of sight. So far as the observations of the author have extended, it is in California a bird of passage, being only found there in the autumn and winter.

Cathartes atratus, the Black Vulture, is quite common in almost every part of the country west of the Rocky Mountains. Its habits and general appearance are quite similar to those of the last-mentioned species.

Aquila Chrysaetos, the Golden Eagle, is a noble bird, and is considered, by the Indians as well as the civilized nations, an emblem of power and bravery. Its plumes are used by the natives as ornaments, and are attached to their pipes or calumets, from which circumstance it is called the Calumet Eagle. This species is found on the coast, and in most sections of the woody and mountainous parts of California. It feeds on hares, grouse, and other game, and seldom, if ever, catches fish.

Aquila leucocephala, the Bald Eagle.—This well-known bird, the "American Eagle" by pre-eminence, seems hardly worthy of his place as the emblem of the United States. Though in appearance, in elegance and strength of figure, in rapidity of flight, and keenness of vision, he is inferior to none of his race, the truth compels the confession that his private character is tinged with some unworthy vices. His appetite is dreadfully voracious, and when it cannot be otherwise satisfied, he contents himself with attacking the vultures, and devouring the disgusting contents of their maws, after compelling them to disgorge by repeated blows on their backs. He is also a complete pirate in his warfare with the honest fish-hawk, often forcing the

latter, by dint of superior size and strength, to give up his well earned, long watched for, and skilfully secured prey of fish, which he devours with great zest. He is a very expert fisher himself, however, and the weight of his victim is sometimes really surprising. The haunts of this eagle are about streams which contain its favourite food, where it may often be seen perched on the overhanging limb of a dead tree, keeping vigilant watch on the water below, and along the coast, near the mouths of creeks and inlets of the sea. The voice is a shrill scream, or whistle, which may be heard at a great distance. The young are generally from two to four in number, and they remain a long time in the nest. Great confusion has been produced in nomenclature by the frequent mistakes arising from the variety of colour in this bird, a variety which seems to depend solely upon age. The first plumage is of a brownish black colour, which in the ensuing summer becomes a dark and speckled gray, and it is not till the third year that it assumes the pure and brilliant white of the head and neck, which has given it the epithet of "Bald," and the deep black of the rest of the body. The bald eagle is about three feet in length, and seven in extent. The wings and claws are extremely vigorous and powerful.

Aquila Haliaeetus, the Osprey or Fish Hawk, inhabits the coast, and many of the interior waters of this country. This bold and active fisher has been so well described by naturalists as to make any extended notice here superfluous, though his admirable traits of character, his perseverance, patience, and skill in his occupation as an angler, forbid us to entirely omit speaking of him. Almost every one who has visited the Atlantic coast, from Maine to Georgia, is acquainted with this bird, and has observed his well-contested quarrels with the bald eagle.

Falco peregrinus, the Black Hawk, or Peregrine Falcon, is found in some parts, particularly the northern, where he is probably only a summer visitor. This hawk, as well as many other species, is called "little eagle" by the Indians.

Falco Islandicus, the Jer-Falcon, is an elegant and bold bird, probably the most beautiful of the tribe. He inhabits the northern coast, and is properly confined to the frozen regions, though individuals are by no means rare in Upper California. The colour of this bird is nearly white, with small brown spots on the back and rump. Some specimens are met with whose colour is purely and entirely white. It preys on plover, geese, and ducks, which it strikes while on the wing with great vigour. It is an exceedingly strong-winged and powerful bird, and measures about thirty inches in length by four feet six inches in extent.

Several other of the Falcons of lesser note are found here. Among these may be mentioned the *Falco sparverius*, Sparrow Hawk, well known all over North America; the *Falco columbarius*, Pigeon Hawk; and the beautiful

Accipiter plumbarius, Gos Hawk, identical with the European species, so celebrated for its use in the noble sport of falconry.

Of the Owls there are several species. The *Strix Virginiana*, Great Horned Owl, often alarms the benighted traveller with its discordant hootings. It is somewhat different from its brethren of the same species in the States, the colour being a deeper and brighter brown. The *Strix nyctæa*, Great Snow Owl, is well known as an inhabitant of almost all the northern parts of America. It preys on rats, birds, and hares, and is a very dexterous fisher. The Indians, and even the white residents, sometimes eat it—and, indeed, its flesh is very white and palatable. Several other owls inhabit this country, among which must be mentioned the little *Strix cucularia*, which seems to reverse the habits of its family, by living in the burrows of the prairie marmot. They may be seen in great numbers, just at the close of the evening, sitting at the mouths of their holes on the sandy plains.

Lanius borealis, the Northern Shrike; several species of *Tyrannus* and *Tyrannula*, Fly-Catchers; *Merula migratoria*, the Robin; *Orpheus felivox*, the Cat-Bird; *Orpheus rufus*, the Brown Thrush; several *Sylvicolæ*; *Alauda*, the Lark, one or two species; *Emberiza nivalis*, the Snow Bunting; *Icterus phanieus*, the Redwing, are found in various parts of the Californias, as well as in the United States.

Loxia leucoptera, the Crossbill, is found all over the country in the pine forests, and displays great dexterity in picking out with its curiously constructed bill the seeds of the pine cones, which are its principal food.

Corvus corax, the Raven, is numerous in many parts of the Californias, and differs not at all in plumage and habits from its brethren in the United States. *Corvus corone*, the Crow, is also found in great numbers.

Corvus pica, the Magpie, much resembles in general appearance the European species, from which it differs in size, being considerably larger, and its colours are rather deeper, and more brilliant. It is a bold and saucy bird, living upon various kinds of reptiles, and even small birds, is fond of carrion of all sorts, and has often the impudence to visit the camp of the hunter and carry off his meat.

Garrulus cristatus, the Common Blue Jay, and another smaller species, probably *G. Stelleri*, are quite common. The latter sometimes congregate in flocks of considerable number, and are tame and familiar, coming freely into the villages in search of food.

Colaptes Mexicanus, a very pretty Woodpecker, is found in Upper California, and all along the Pacific coast, and is, with the exception of an occasional individual of the golden winged species, *Picus auratus*, the only woodpecker which the author has observed, except a species at Monterey, which is probably not yet described.

In some parts of California, particularly in the south, the beautiful Humming Bird is quite numerous. As far as the author's notice has extended, the species are but two, the

Trochilus colubris, Common Humming Bird, well known to every one in the United States, and a still more elegant species, *T. rufus*, which seems to inhabit almost the whole country, from Nootka Sound to the Rio del Norte, in Mexico. This delicate and splendid little creature is somewhat less in size than the common species, and is perhaps the most perfect gem in nature. When seen glancing through the leaves, it resembles the flash of a large ruby.

Swallows are abundant, and of several species, among which may be mentioned *Hirundo Americana*, the Common Barn Swallow; *H. lunifrons*, the Cliff Swallow, and the *H. riparia*, Bank Swallow, or Sand Martin.

Caprimulgus Virginianus, the Night Hawk, often alarms the wearied traveller, near night-fall, by swooping down and uttering in his ear its odd and startling note. *Alcedo Aleyon*, the Kingfisher, is seen flitting over every little stream and watercourse, in search of his scaly prey, and seems to be a component feature in the scenery of every rapid and waterfall.

There is probably no country in the world which produces so many varieties of the Grouse, or in so great numbers. The heart of a Yankee sportsman would almost burst with delight at the success of a day's shooting in some parts of the interior of California. *Tetrao urophasianus*, the Great Cock of the Plains, second only in size and beauty to the celebrated cock of the woods of the North of Europe, is very plentiful in North California, as well as in the regions watered by the Columbia River. This noble bird generally makes his residence in the barren plain, among low bushes and brushwood, under which it runs and lurks, and is flushed with some difficulty, generally taking wing near enough to the shooter to afford him a fair mark. The cock of the plains is about thirty inches in length, and nearly four feet in extent, and weighs from seven to ten pounds. The flesh is very fine and delicate. The colour is a bright gray, varied with small brown spots on the back and wings. Another fine species is the *T. obscurus*, Dusky Grouse, a very handsome bird, though much less in size than the preceding, and which, together with the *T. rupestris*, Rock Grouse, inhabits the mountainous regions of the north. *T. umbellus*, the Ruffed Grouse, or Pheasant of the Southern States, and the *T. leucurus*, White Tailed Grouse are common in different places. I have never met with either the *T. phasianellus*, Pintail Grouse, or the *T. Franklinii*, which are probably confined to the more remote regions of the north.

The bays, inlets, and rivers, are well stocked with different species of water birds, and the lowlands near the outlets of some of the streams on the Pacific coast actually swarm with geese, ducks, widgeon, teal, cranes, curlews, snipes, and various other waders and swimmers. Of this class of birds, the infinite variety forbids mention but of a few individuals. The *Tringa*, Sand Piper; the *Charadrius*, Plover; the *Numerinus*,

Curlew; the *Totanus*, Tatler; the *Limosa*, Godwit; the *Scelopax*, Snipe; the *Phalarope*; the *Larus*, Gull; of each several species, and in immense numbers, throng the shores.

Cygnus buccinator, the Swan, is the largest bird of the country, and seems to differ in nothing from the same species elsewhere. Its colour is pure white, except that of the bill and legs, which are black, and of the forehead, which is a fine orange. This is a splendid and powerful bird. They arrive from the far north in the spring, generally as early as April, and return in October or November.

A smaller species of swan frequents the same locality. It resembles the last mentioned, except in size, being considerably smaller, and in its note, which is quite different. This may be the *C. Bewickii*. Douglas speaks of a third variety, found near the Columbia, and which he describes as equal in size to the common swan, of a bluish gray on the back, and white on the belly, and he states that this colour is "preserved in all stages of its growth." This is probably a mistake. That individuals answering this description are found, there is no doubt, but they seem to be the young of the first mentioned species.

Geese are abundant in similar places, and their term of residence in the country, and of migration, appears to be the same with those of the swan. The species which have come under the author's observation are the *Anser albifrons*, Laughing Goose; *A. Canadensis*, the Common Wild Goose; *A. hyperboreus*, the Snow Goose, and *A. bernaclo*, the Brant.

Pelecanus onocrotalus, the White Pelican, is sometimes seen in various places on the coast. A flock of these birds, standing in a line on the very verge of the sandy shore, is a fine sight; their pure white colour and lofty stature making them visible at a great distance. The peculiar habits of the pelican have often been described, and nothing new can be added as having come under the special observation of the author. Large numbers frequent the harbours, and resort much to the little island of Alcatrazes, which is covered with their exuviae.

Off the Pacific coast may be seen the huge Albatross, so well known to seamen, on almost all parts of the deep. These can often be taken by throwing a hook over the side of the vessel, baited with a piece of pork, or other meat. Their voracity is so excessive that they will quarrel for possession of the prize which costs its unfortunate captor so dear. There are two species, *Diomedea exulans*, and *fuliginosa*. Specimens are sometimes seen of the most enormous size, measuring nearly four feet in length, and from ten to twelve across the wings.

There are probably many yet undescribed birds and quadrupeds in this country. The author's sketches in this department are necessarily rather those of a traveller than a naturalist, and he has been obliged to content himself with mentioning those species which casually came within his own notice. It is very probable that many inaccuracies may be

detected, both in his nomenclature and descriptions, but these may be excused by the circumstances under which his notes were taken, his lack of books of reference, and his imperfect acquaintance with the science of zoology. The foregoing outlines of the natural history of the Californias must therefore be considered as possessing little pretension to the notice of the scientific student, but only as a part of the general plan of the author, in giving a brief account of the most striking objects which offered themselves directly to his observation, and as being intended merely for the eye of the general reader. Indeed, it would be useless as well as a presumptuous task, to attempt, in a book of this kind, an elaborate description of the natural productions of the Californias; and the more so in regard to one portion at least of those productions, since the announcement of the intended issue of a work which, for the elegance and costliness of its design, the skill and research displayed in its contents, and the well-earned celebrity of its principal author, will probably be unsurpassed by any similar undertaking. "*The Viviparous Quadrupeds of North America*," now in course of publication, will undoubtedly add a crown-jewel laurel to the already well-adorned brow of John L. Audubon.

FISH.—There are, perhaps, no waters in the world so productive of fish as those of the Californias, and of the regions still farther to the north. Immense numbers, and every variety of sea fish swarm in the Pacific coast, and the rivers are densely populated with several valuable species.

The California Gulf produces also great numbers of edible shell-fish. The Oyster, the Pearl-shell, the Muscle, several species of *Haliotis*, all afford either food or articles of trade and ornament to the inhabitants. In Upper California fish are generally little sought after, the productions of the earth being so numerous and plentiful; but in the colder regions of the north, they afford the common, and sometimes the sole subsistence of the natives. In the Columbia, as well as in the San Joaquin and Sacramento rivers, and in almost every water-course having its outlet in the sea, the numbers of *Salmo*, (*Schouleri*,) Salmon, are almost incredible. On some of these rivers from two to three thousand are sometimes taken in a single day. The Indians sometimes capture them with a kind of wicker basket, similar to that used by the fishermen on the Atlantic coast for taking lobsters. This is done in the spring, when the fish are on their passage up the stream. They are also taken with the spear, which consists of a sharp piece of bone fastened to the end of a shaft of wood twelve or fifteen feet in length, and which the Indians use with great dexterity, frequently securing salmon of from twenty to thirty pounds in weight. The fish are dried or salted, and preserved for future use. They are also sometimes taken with only a small scoop net, fastened to the end of a pole. Douglas speaks of an individual measured by him, which was three feet five inches long, and ten inches

broad, weighing thirty-five pounds. The author can vouch for the fact that this size is not exaggerated, having often seen specimens nearly or quite as large. Some of the streams also abound with very fine salmon trout, and with a small trout nearly resembling the one which affords so much sport to the anglers of the United States.

Accipenser transmontanus, the Sturgeon, sometimes attains great size in the large rivers, being from eight to ten feet in length, and weighing nearly five hundred pounds. In general, however, this fish is of much smaller dimensions. It is principally found not far from the mouths of the rivers.

In the Bay of Monterey is a species of Mackerel, *Scomber colias*, in great plenty, and easily taken. Here, as well as in most other parts of the coast, also swim schools of a small fish resembling, if not identical with, the Sardine of Italy, familiar to epicures. These are sometimes seen in such immense numbers that the surface of the water for a great distance around, resembles a living mass, being kept in constant commotion by their fins. Porpoises are very numerous in almost every bay on the whole coast, and in foul weather may always be seen playing their pranks on the waves; while far in the offing appears the spouting of the huge whale.

The Halibut, Pilchard, Skate, Turbot, Bonito, and many other species, are found in various parts of the sea-coast. The shell-fish are numerous and valuable, particularly in the gulf. Of these may be mentioned, Oysters, which are often of large size and excellent flavour, Muscles, several species of Haliotis, Patella, Cardium, and Turbo, besides *Mya margaritifera*, the Pearl Oyster, the product of which, as an article of commerce, is well known. The pearls produced by these shell-fish are, in this country, of very fine water, though rather irregular in figure.

PLANTS.—The Californias offer a very interesting and but partially explored field of research to the botanist. Almost every variety of vegetation, from the luxuriant productions of the tropics to the stunted and scanty growth of the frozen regions, may be found in this country. The labours of Douglas and others have made known to the world many of the most valuable and remarkable species. Of these it is possible here to mention only a few. Of the Pine and Oak there are several noble and useful varieties, in different parts of the country. One of these, *Pinus Douglasii*, first described by Douglas, is probably the grandest of the whole vegetable kingdom. It is found on the mountains about the Bay of San Francisco, on the highlands near the upper branches of the Colorado River, and in some other sections of Upper California, generally on elevated localities. My readers must not think of Baron Munchausen, when I offer to vouch for the fact that specimens of this tree occur of the height of two hundred and forty feet, the base of whose trunks have a circumference of nearly sixty feet. The trunk is quite destitute of branches, until above more

than half the altitude, when they grow outward and upward in such a manner as to give the top the form of an inverted pyramid. From the ends of the branches hang the cones or seed-vessels, from twelve to fifteen inches in length, and egg-shaped. The seeds are as large as a good-sized bean, and furnish a common article of food to the Indians, who collect large quantities of them in the autumn, and pound them into a kind of cake, which is baked on heated stones. The wood is very fine-grained, and contains a great quantity of resin.

The *Pinus Sabinii*, *P. Lambertiana*, *P. nobilis*, and *P. resinosa*, are also fine species, though less in size than their gigantic relative. The former is, however, a large tree, being often found one hundred and ten feet high, and from ten to twelve in diameter. Among the elevated plains of Upper California it grows quite plentifully, as also on the low hills, near the coast, where it attains a larger size. The natives frequently build their fires against these trees to save the trouble of collecting fuel. By this means, also, a sweet gum is made to exude from the trunk, which serves them for sugar.

The White Oak grows on the low and level parts of the country. It is not generally a large tree, being from forty to fifty feet high, and from two to three feet in diameter at the base. The top is extremely thick and leafy, forming an almost impenetrable mass of boughs. It is in some places very abundant.

The *Quercus navalis* occupies the prairies, river banks, and lower hills, and is four or five feet in diameter, with branches of corresponding dimensions, extending horizontally from the trunk. The Live Oak, *Q. virens*, grows only on the highlands. It is from two to five feet in thickness, and from sixty to seventy in height. The Maple, the Ash, the Beech, the Chestnut, in several varieties, compose large portions of the forests.

It is impossible to give a full description of the flowering shrubs and plants of Upper California, so great is their variety and beauty. We have only space to notice a few of the most conspicuous. A species of Raspberry, *Ribes speciosum*, is one of the most elegant flowering shrubs of the country. It is exceedingly abundant in some localities, and, with its long crimson stamens, and its deep green leaves, presents an appearance truly lovely. The flowers bloom early in spring. The fruit I have not seen. In many places are found several species of *Mimulus*, one of which is from three to four feet in height, and is a very showy plant. This country also has numerous species of *Phlox* and *Heuchera*, and innumerable quantities of *Epilobium*, *Eriogonum*, or Primrose, *Pentstemon*, *Papaver*, or Poppy, *Delphinium*, and *Salvia*. A species of Lily also grows here, the roots of which are eaten by the natives. The *Scilla esculenta* grows along the whole coast of Upper California. This is called, by the natives, "*Quamash*," and the root forms a very common article of food. To prepare this for eating, a hole is

made in the ground, and a number of stones placed in it, on which a fire is kindled and kept burning until they are made hot, when the fire is extinguished, and the roots, wrapped in straw, leaves, and moss, are placed upon them. They are well roasted in a few hours, and are then taken off and hung up to dry. This root is also sometimes pounded and made into cakes, which are preserved for future use. The taste is sweet, and rather agreeable, but if eaten too freely they are apt to produce diarrhœa. This plant is most abundant on the banks of rivers and on lowlands by the margins of forests, in which localities are also found several species of *Pyrola*, *Caprifolium*, and *Lupinus*, which sometimes cover an immense extent of land. The *Arbutus* is also abundant in similar situations. The large species, *A. procera*, is a fine shrub, frequently attaining a growth which entitles it to be called a tree. The *A. uva ursi* is found in almost every part of the colder sections of the country, and its berries are frequently eaten by the natives, and even by travellers. A very useful plant to the natives is the *Helonias tenax*, the fibres of which are stronger than any hemp. Cords made of this are used by the Indians for the purpose of snaring deer, and other animals; and one the thickness of the little finger is so strong as not to be broken by the largest elk.

The Gooseberry grows in Upper California, and bears plentifully. The sand-hills and moors are covered with a great variety of Syngenesious plants, and on the more fertile and humid soil grows a gaudy-flowered Currant-bush, and a pretty species of Honeysuckle. Perhaps the most remarkable shrub here is the *Yedra*, a poisonous plant, which, however, affects some particular constitutions only. By contact with the skin, it produces tumours and violent inflammation. It is a slender shrub, preferring cool and shady places, and bearing a trefoil crenated leaf. Two roots—the plants of which I have not seen—are used by the natives for soap; these are called *Amole* and *Samate*. On the rocky coast south of Monterey are immense collections of sea-weed, *Fucus pyriformis*, which are said to have gathered there in such abundance as to have saved

several vessels from splitting on the rocks, when driven on them by the tempest.

MINERALS.—The mineral wealth of the Californias has not been examined by persons capable of forming a correct idea of its nature and extent. The imperfect observations of travellers, embellished by the eager love of the precious metals, are not to be relied on. Some facts, however, exist, which having been well and often observed, may be mentioned.

A very fine article of bituminous coal has been discovered in the neighbourhood of San Francisco; and indications of its existence in other parts of the country are numerous and well marked.

A quicksilver mine is said to exist near the mountains east of Monterey, which, if we may believe report, is the richest in the world.

A silver mine has been discovered a short distance from Monterey. This affords a very rich ore, and easily wrought. The author saw spoons and other articles made of the products of this mine.

There is a gold mine situate near the Pueblo de los Angeles, which is very rich. The ore was tested by my friend Doctor Lyman, and was found to yield more than ninety per cent. The inhabitants have observed very extensive veins of gold in the vicinity of the Bay of San Francisco, and, indeed, in many other parts of this beautiful land. In Lower California there are several mines, which the people are working in a rude way, but with considerable profit. Virgin silver and gold are often found in considerable quantities. No doubt is entertained by those best acquainted with the Californias, that they will become, when science shall be applied in the development of their wealth, one of the richest mineral provinces of America. This belief is much strengthened by the fact that the Indians, whenever they choose, can bring into the settlements large quantities of these ores, which they either find on the surface, or pry from the crevices of the rocks with sharpened sticks, bones, or hunting knives. They cannot be induced to show the whites where they obtain these, on account of an old traditional superstition, that if they should do so, they would immediately die.—Pp. 380—402.

EXTRACT FROM THE PRESIDENT'S MESSAGE

To the Senate and House of Representatives, in Congress assembled, Dec. 5, 1848.

It was known that mines of the precious metals existed to a considerable extent in California at the time of its acquisition. Recent discoveries render it probable that these mines are more extensive and valuable than was anticipated. The accounts of the abundance of gold in that territory are of such an extraordinary character as would scarcely command belief, were they not corroborated by the authentic reports of officers in the public service, who have visited the mineral district, and derived the facts which they detail from personal observation. Reluctant to credit the reports in general circulation as to the quantity of gold, the officer commanding our forces in California visited the mineral district in July last, for the purpose of obtaining accurate information on the subject. His report to the War Department of the result of his examination, and the facts obtained on the spot, is herewith laid before Congress. When he visited the country, there were about four thousand persons engaged in collecting gold. There is every reason to believe that the number of persons so employed has since been augmented. The explorations already made warrant the belief that the supply is very large, and that gold is found in various places in extensive districts of country.

Information received from officers of the navy, and other sources, though not so full and minute, confirm the accounts of the commander of our military force in California. It appears also, from these reports, that mines of quicksilver are found in the vicinity of the gold region. One of them is now being worked, and is believed to be among the most productive in the world.

The effects produced by the discovery of these rich mineral deposits, and the success which has attended the labours of those who have resorted to them, have produced a surprising change in the state of affairs in California. Labour commands a most exorbitant price, and all other pursuits but that of search-

ing for the precious metals are abandoned. Nearly the whole of the male population of the country have gone to the gold district. Ships arriving on the coast are deserted by their crews, and their voyages suspended for want of sailors. Our commanding officer there entertains apprehensions that soldiers cannot be kept in the public service without a large increase of pay. Desertions in his command have become frequent, and he recommends that those who shall withstand the strong temptations, and remain faithful, should be rewarded.

This abundance of gold, and the all-engrossing pursuit of it, have already caused in California an unprecedented rise in the price of the necessities of life.

That we may the more speedily and fully avail ourselves of the undeveloped wealth of these mines, it is deemed of vast importance that a branch of the mint of the United States be authorized to be established, at your present session, in California. Among other signal advantages which would result from such an establishment would be that of raising the gold to its par value in that Territory. A branch mint of the United States at the great commercial depot on the west coast, would convert into our own coin not only the gold derived from our own rich mines, but also the bullion and specie which our commerce may bring from the whole west coast of Central and South America. The west coast of America and the adjacent interior embrace the richest and best mines of Mexico, New Grenada, Central America, Chili and Peru.

The bullion and specie drawn from these countries, and especially from those of Western Mexico and Peru, to an amount in value of many millions of dollars, are now annually diverted and carried by the ships of Great Britain to their own ports, to be recoined or used to sustain her National Bank, and thus contribute to increase her ability to command so much of the commerce of the world.

CALIFORNIA AND HER GOLD.

THE following is a letter from Col. R. B. Mason, of the 1st U. S. dragoons, and accompanies the Report of the Secretary of War. It will be found replete with interest:

HEAD-QUARTERS, 10TH MILITARY DEP'T.)
Monterey, California, Aug. 17, 1848.)

SIR—I have the honour to inform you that, accompanied by Lieut. W. T. Sherman, 3d Artillery, A. A. A. General, I started on the 12th of June last to make a tour through the northern part of California. My principal purpose, however, was to visit the newly discovered gold "placer," in the valley of the Sacramento. I had proceeded about forty miles, when I was overtaken by an express, bringing me intelligence of the arrival at Monterey of the United States ship Southampton, with important letters from Commodore Shubrick, and Lieut. Col. Barton. I returned at once to Monterey, and despatched what business was most important, and on the 17th resumed my journey. We reached San Francisco on the 20th, and found that all, or nearly all, its male inhabitants had gone to the mines. The town, which a few months before was so busy and thriving, was then almost deserted. On the evening of the 24th, the horses of the escort were crossed to Sausalito in a launch, and on the following day we resumed the journey, by way of Bodega, and Sonoma, to Sutter's Fort, where we arrived on the morning of the 2d of July. Along the whole route, mills were lying idle, fields of wheat were open to cattle and horses, houses vacant, and farms going to waste. At Sutter's there was more life and business. Launches were discharging their cargoes at the river, and were hauling goods to the fort, where already were established several stores, a hotel, &c. Captain Sutter had only two mechanics in his employ, a wagon-maker and a blacksmith, whom he was then paying \$10 a day. Merchants pay him a monthly rent of \$100 per room; and, whilst I was there, a two story house in the fort was rented as a hotel, for \$500 a month.

At the urgent solicitation of many gentlemen, I delayed there to participate in the first public celebration of our national anniversary at that fort, but on the 5th resumed the journey, and proceeded twenty-five miles up the American fork, to a point on it now known as the Lower Mines, or Mormon Diggins. The hill sides were thickly strewn with canvas tents and bush arbours; a store was erected, and several boarding shanties in operation. The day was intensely hot, yet about two

hundred men were at work in the full glare of the sun, washing for gold—some with tin pans, some with close woven Indian baskets, but the greater part had a rude machine, known as the cradle.

This is on rockers, six or eight feet long, open at the foot, and at its head has a coarse grate or sieve; the bottom is rounded, with small cleets nailed across. Four men are required to work this machine; one digs the ground in the bank close by the stream; another carries it to the cradle and empties it on the grate; a third gives a violent rocking motion to the machine; whilst a fourth dashes on water from the stream itself. The sieve keeps the coarse stones from entering the cradle, the current of water washes off the earthy matter, and the gravel is gradually carried out at the foot of the machine, leaving the gold mixed with a heavy fine black sand above the first cleets.

The sand and gold mixed together are then drawn off through augur holes into a pan below, are dried in the sun, and afterwards separated by blowing off the sand. A party of four men thus employed, at the lower mines, averaged \$100 a day. The Indians, and those who have nothing but pans, or willow baskets, gradually wash out the earth, and separate the gravel by hand, leaving nothing but the gold mixed with sand, which is separated in the manner before described. The gold in the lower mines is in fine bright scales, of which I send several specimens.

As we ascended the south branch of the American fork, the country became more broken and mountainous, and at the saw-mill, twenty-five miles above the lower washings, or fifty miles from Sutter's, the hills rise to about a thousand feet above the level of the Sacramento plain. Here a species of pine occurs, which led to the discovery of the gold. Capt. Sutter, feeling the great want of lumber, contracted, in September last, with a Mr. Marshall, to build a saw-mill at that place. It was erected in the course of the last winter and spring—a dam and race constructed; but when the water was let on the wheels, the tail race was found to be too narrow to permit the water to escape with sufficient rapidity.

Mr. Marshall, to save labour, let the water directly into the race, with a strong current, so as to wash it wider and deeper. He effected his purpose, and a large bed of mud and gravel was carried to the foot of the race. One day Mr. Marshall, as he was walking down the

race to this deposit of mud, observed some glittering particles at its upper edge; he gathered a few, examined them, and became satisfied of their value. He then went to the fort, told Captain Sutter of his discovery, and they agreed to keep it secret, until a certain grist-mill of Sutter's was finished. It, however, got out, and spread like magic. Remarkable success attended the labours of the first explorers, and in a few weeks hundreds of men were drawn thither. At the time of my visit, but little more than three months after its first discovery, it was estimated that upwards of four thousand people were employed. At the mill there is a fine deposit or bank of gravel, which the people respect as the property of Capt. Sutter, although he pretends to no right to it, and would be perfectly satisfied with the simple promise of a pre-emption, on account of the mill, which he has built there at considerable cost.

Mr. Marshall was living near the mill, and informed me that many persons were employed above and below him, and they used the same machines at the lower washings, and that their success was about the same—ranging from one to three ounces of gold per man, daily. This gold, too, is in scales a little coarser than those of the lower mines. From the mill, Mr. Marshall guided me up the mountain on the opposite or north bank of the south fork, where, in a bed of small streams and ravines, now dry, a great deal of coarse gold has been found. I saw there several parties at work, all of whom were doing very well; a great many specimens were shown me, some as heavy as four or five ounces in weight, and I send three pieces, labelled No. 5, presented by a Mr. Spence.

You will perceive that some of the specimens accompanying this, hold mechanically pieces of quartz; that the surface is rough, and evidently moulded in the crevice of a rock. This gold cannot have been carried far by water, but must have remained near where it was first deposited from the rock that once bound it. I inquired of many people if they had encountered the metal in its matrix, but in every instance they said they had not, but that the gold was invariably mixed with washed gravel, or lodged in the crevices of other rocks. All bore testimony that they had found gold in greater or less quantities in the numerous small gullies or ravines that occur in that mountainous region.

On the 7th of July I left the mill, and crossed to a small stream emptying into the American fork, three or four miles below the saw-mill. I struck this stream (now known as Weber's creek) at the washings of Sunol & Co. They had about thirty Indians employed, whom they pay in merchandise. They were getting gold of a character similar to that found on the main fork, and doubtless in sufficient quantities to satisfy them. I send you a small specimen, presented by this company, of their gold. From this point we proceeded up the stream about eight miles, where we found a great many people and Indians—some engaged in

the bed of the stream, and others in the small side valley that put into it. These latter are exceedingly rich, and two ounces were considered an ordinary yield for a day's work.

A small gutter, not more than a hundred yards long, by four feet wide, and two or three feet deep, was pointed out to me as the one where two men, William Daly and Perry McCoon, had a short time before obtained \$17,000 worth of gold. Capt. Weber informed me that he knew that these two men had employed four white men and about a hundred Indians, and that, at the end of one week's work, they paid off their party, and had left \$10,000 worth of this gold.

Another small ravine was shown me, from which had been taken upwards of \$12,000 worth of gold. Hundreds of similar ravines, to all appearances, are as yet untouched. I could not have credited these reports, had I not seen, in the abundance of the precious metal, evidence of their truth. Mr. Neligh, an agent of Commodore Stockton, had been at work about three weeks in the neighbourhood, and showed me, in bags and bottles, over \$2000 worth of gold; and Mr. Lyman, a gentleman of education, and worthy of every credit, said he had been engaged with four others, with a machine, on the American fork, just below Sutter's mill; that they worked eight days, and that his share was at the rate of \$50 a day; but hearing that others were doing better at Weber's place, they had removed there, and were then on the point of resuming operations. I might tell of hundreds of similar instances; but, to illustrate how plentiful the gold was in the pockets of common labourers, I will mention a simple occurrence, which took place in my presence, when I was at Weber's store. This store was nothing but an arbour of bushes, under which he had exposed for sale goods and groceries suited to his customers.

A man came in, picked up a box of Seidlitz powders, and asked its price. Capt. Weber told him it was not for sale. The man offered an ounce of gold, but Capt. Weber told him it only cost fifty cents, and he did not wish to sell it. The man then offered an ounce and a half, when Capt. Weber had to take it. The prices of all things are high, and yet Indians, who before hardly knew what a breech cloth was, can now afford to buy the most gaudy dresses.

The country on either side of Weber's creek is much broken up by hills, and is intersected in every direction by small streams or ravines, which contain more or less gold. Those that have been worked are barely scratched, and although thousands of ounces have been carried away, I do not consider that a serious impression has been made upon the whole. Every day was developing new and richer deposits, and the only impression seemed to be, that the metal would be found in such abundance as seriously to depreciate in value.

On the 8th of July I returned to the lower mines, and on the following day to Sutter's, where, on the 10th, I was making preparations

for a visit to the Feather, Yubah, and Bear rivers, when I received a letter from Commander A. R. Long, United States Navy, who had just arrived at San Francisco, from Mazatlan, with a crew for the sloop-of-war Warren, with orders to take that vessel to the squadron at La Paz. Capt. Long wrote to me that the Mexican Congress had adjourned without ratifying the treaty of peace, that he had letters for me from Commodore Jones, and that his orders were to sail with the Warren on or before the 20th of July. In consequence of these, I determined to return to Monterey, and accordingly arrived here on the 17th of July. Before leaving Sutter's, I satisfied myself that gold existed in the bed of the Feather River, in the Yubah, and Bear, and in many of the small streams that lie between the latter and the American fork; also, that it had been found in the Cosummes, to the south of the American fork. In each of these streams the gold is found in small scales, whereas in the intervening mountains it occurs in coarser lumps.

Mr. Sinclair, whose rancho is three miles above Sutter's, on the north side of the American, employs about fifty Indians on the north fork, not far from its junction with the main stream. He had been engaged about five weeks when I saw him, and up to that time his Indians had used simply closely woven willow baskets. His net proceeds (which I saw) were about \$16,000 worth of gold—14 pounds avoirdupois of clean-washed gold.

The principal store at Sutter's Fort, that of Blanman & Co., had received in payment of goods, \$36,000 worth of this gold, from the 1st of May to the 10th of July. Other merchants had also made extensive sales. Large quantities of goods were daily sent forward to the mines, as the Indians, heretofore so poor and degraded, have suddenly become consumers of the luxuries of life. I before mentioned that the greater part of the farmers and rancheros had abandoned their fields to go to the mines. This is not the case with Captain Sutter, who was carefully gathering his wheat, estimated at 40,000 bushels. Flour is already worth, at Sutter's, \$36 a barrel, and soon will be \$50. Unless large quantities of breadstuff reach the country, much suffering will occur; but, as each man is now able to pay a large price, it is believed the merchants will bring, from Chili and Oregon, a plentiful supply for the coming winter.

The most moderate estimate I could obtain from men acquainted with the subject, was, that upwards of four thousand men were working in the gold district, of whom more than one-half were Indians; and that from \$30,000 to \$50,000 worth of gold, if not more, was daily obtained. The entire gold district, with very few exceptions, of grants made some years ago by the Mexican authorities, is on land belonging to the United States. It was a matter of serious reflection with me, how I could secure to the government certain rents or fees for the privilege of procuring this gold; but, upon considering the large extent of coun-

try, the character of the people engaged, and the small, scattered force at my command, I resolved not to interfere, but to permit all to work freely, unless broils and crime should call for interference. I was surprised to learn that crime of any kind was very unfrequent, and that no thefts or robberies had been committed in the gold district.

All live in tents, in bush-arbours, or in the open air; and men have frequently about their persons thousands of dollars worth of this gold; and it was to me a matter of surprise that so peaceful and quiet a state of things should continue to exist. Conflicting claims to particular spots of ground may cause collisions, but they will be rare, as the extent of country is so great, and the gold so abundant, that for the present there is room and enough for all. Still, the government is entitled to rents for this land, and immediate steps should be devised to collect them, for the longer it is delayed the more difficult it will become. One plan I would suggest is, to send out from the United States surveyors, with high salaries, bound to serve a specified period.

A Superintendent, to be appointed at Sutter's Fort, with power to grant licenses to work a lot of ground, say one hundred square yards, for one year, at a rent of from \$100 to \$1000, at his discretion; the surveyors to measure the ground, and place the renter in possession.

A better plan, however, will be to have districts surveyed and sold at public auction, to the highest bidder, in small parcels, say from twenty to forty acres. In either case, there will be many intruders, whom, for years, it will be almost impossible to exclude.

The discovery of these vast deposits of gold has entirely changed the character of Upper California. Its people, before engaged in cultivating their small patches of ground, and guarding their herds of cattle and horses, have all gone to the mines, or are on their way thither. Labourers, of every trade, have left their work-benches, and tradesmen their shops. Sailors desert their ships as fast as they arrive on the coast, and several vessels have gone to sea with hardly enough hands to spread a sail. Two or three are now at anchor in San Francisco, with no crew on board. Many desertions, too, have taken place from the garrisons within the influence of these mines; twenty-six soldiers have deserted from the post of Sonoma, twenty-four from that of San Francisco, and twenty-four from Monterey. For a few days the evil appeared so threatening, that great danger existed that the garrisons would leave in a body; and I refer you to my orders of the 25th of July, to show the steps adopted to meet this contingency. I shall spare no exertions to apprehend and punish deserters, but I believe no time in the history of our country has presented such temptations to desert as now exist in California. The danger of apprehension is small, and the prospect of high wages is certain; pay and bounties are trifles, as labouring men at the mines can now earn, in *one day*, more

than double a soldier's pay and allowances for a month, and even the pay of a lieutenant or captain cannot hire a servant. A carpenter or mechanic would not listen to an offer of less than fifteen or twenty dollars a day. Could any combination of affairs try a man's fidelity more than this? and I really think some extraordinary mark of favour should be given to those soldiers who remain faithful to their flag throughout this tempting crisis.

No officer can now live in California on his pay—money has so little value. The prices of necessary articles of clothing and subsistence are so exorbitant, and labour so high, that to hire a cook or a servant has become an impossibility, save to those who are earning from thirty to fifty dollars per day. This state of things cannot last for ever. Yet from the geographical position of California, and the new character it has assumed, as a mining country, prices of labour will always be high, and will hold out temptations to desert. I therefore have to report, if the government wish to prevent desertions here, on the part of the men, and to secure zeal on the part of officers, their pay must be increased very materially. Soldiers, both of the volunteers and regular service, discharged in this country, should be permitted at once to locate their land warrants in the gold district. Many private letters have gone to the United States, giving accounts of the vast quantity of gold recently discovered, and it may be a matter of surprise why I have made no report on this subject at an earlier date. The reason is, that I could not bring myself to believe the reports that I heard of the wealth of the gold district, until I visited it myself. I have no hesitation now in saying that there is more gold in the country drained by the Sacramento and San Joaquin rivers than will pay the cost of the present war with Mexico a hundred times over. No capital is required to obtain this gold, as the labouring man wants nothing but his pick, shovel, and a tin pan, with which to dig and wash the gravel, and many frequently pick gold out of the crevices of rocks, with their butcher knives, in pieces from one to six ounces.

Mr. Dye, a gentleman residing in Monterey, and worthy of every credit, has just returned from Feather River. He tells me that the company to which he belonged worked seven weeks and two days, with an average of fifty Indians, (washers,) and that their gross product was two hundred and seventy-three pounds of gold. His share, (one-seventh,) after paying all expenses, is about thirty-seven pounds, which he brought with him and exhibited in Monterey. I see no labouring man from the mines, who does not show his two, three, or four pounds of gold.

A soldier of the Artillery company returned here a few days ago from the mines, having been absent on furlough twenty days. He made, by trading and working during that time, \$1500. During these twenty days, he was travelling ten or twelve days, leaving but a week, in which he made a sum of money

greater than he receives in pay, clothes, and rations, during a whole enlistment of five years. These statements appear incredible, but they are true.

Gold is also believed to exist on the eastern slope of the Sierra Nevada; and when at the mines I was informed by an intelligent Mormon, that it had been found near the Great Salt Lake by some of his fraternity. Nearly all the Mormons are leaving California, to go to the Salt Lake—and this they surely would not do, unless they were sure of finding gold there in the same abundance as they now do on the Sacramento.

The gold "placer" near the mission of San Fernando has long been known, but has been little wrought, for want of water. This is in a spur that puts off from the Sierra Nevada, (see Fremont's map,) the same in which the present mines occur. There is, therefore, every reason to believe, that in the intervening spaces of five hundred miles, entirely unexplored, there must be many hidden and rich deposits. The "placer" gold is now substituted as the currency of this country; in trade it passes freely at \$16 per ounce; as an article of commerce its value is not yet fixed. The only purchase I made was the specimen No. 7, which I got of Mr. Neligh, at \$12 the ounce. That is about the present cash value in the country, although it has been sold for less. The great demand for goods and provisions, made by this sudden development of wealth has increased the amount of commerce at San Francisco very much, and it will continue to increase.

I would recommend that a mint be established at some eligible point of the Bay of San Francisco; and that machinery, and all the necessary apparatus and workmen, be sent out by sea. These workmen must be bound by high wages, and even bound to secure their faithful services, else the whole plan may be frustrated, by their going to the mines as soon as they arrive in California. If this course be not adopted, gold to the amount of many millions of dollars will pass yearly to other countries, to enrich their merchants and capitalists. Before leaving the subject of mines, I will mention, that on my return from Sacramento I touched at New Almoder, the quicksilver mine of Mr. Alexander Forbes, consul of her Britannic Majesty at Tepic. This mine is in a spur of mountains 1000 feet above the level of the Bay of San Francisco, and is distant, in a southern direction from the Pueblo de San Jose, about twelve miles. The ore (cinnabar) occurs in a large vein, dipping at a strong angle to the horizon. Mexican miners are employed in working it, by driving shafts and galleries about six feet by seven, following the vein.

The fragments of rock and ore are removed on the backs of Indians, in raw-hide sacks. The ore is then hauled in an ox wagon, from the mouth of the mine down to a valley well supplied with wood and water, in which the furnaces are situated. The furnaces are of the simplest construction—exactly like a com-

mon bake oven—in the crown of which is inverted a whaler's trying kettle; another inverted kettle forms the lid. From a hole in the lid a small brick channel leads to an apartment, or chamber, in the bottom of which is inserted a small iron kettle. This chamber has a chimney.

In the morning of each day the kettles are filled with the mineral (broken in small pieces) mixed with lime; fire is then applied and kept up all day. The mercury is volatilized, passes into the chamber, and flows into the pot prepared for it. No water is used to condense the mercury.

During a visit I made last spring, four such ovens were in operation, and yielded in the two days I was there, 656 pounds of quicksilver, worth at Mazatlan \$1.80 per pound. Mr. Walkinshaw, the gentleman now in charge of this mine, tells me that the vein is improving, and that he can afford to keep his people em-

ployed even in these extraordinary times. This mine is very valuable of itself, and becomes the more so as mercury is extensively used in obtaining gold. It is not at present used in California for that purpose, but will be at some future time. When I was at this mine last spring, other parties were engaged in searching for veins; but none have been discovered that are worth following up, although the earth in that whole range of hills is highly discoloured, indicating the presence of the ore. I send several beautiful specimens, properly labelled. The amount of quicksilver in Mr. Forhes' vats, on the 15th of July, was about 2,500 pounds.

I enclose you herewith sketches of the country through which I passed, indicating the position of the mines, and the topography of the country in the vicinity of those I visited.

R. B. MASON,

Colonel 1st Dragoons, Commanding.

LETTER OF REV. WALTER COLTON.

MONTEREY, ALTA CALIFORNIA, August 29, 1848.

NEW and important discoveries are made every day in the gold region. Instead of being confined to one stream, as was at first supposed, it has already been found on the banks of five, and in many dry ravines, where the water flows only during the rainy season. These streams take their rise in the chain of mountains which runs north and south through California, and are tributaries of the Sacramento. The discoveries extend already two hundred miles north and south, and some seventy east and west. The strong probability is, that the entire chain—at least five hundred miles of it—is richly impregnated with gold. The ore has been found in the deepest valleys and on the highest hills—at the bottom of meadow-streams and on mountain-cliffs, where only the eagle has been accustomed to pay his visits. It is inexhaustible. As an evidence of this, one fact will be sufficient. Seven men, with their Indians, working on Feather River, took from a space measuring two hundred yards by twenty, two hundred and seventy-five pounds of gold.

It is difficult to ascertain with much precision what the gold hunters average a day per man. But I can state this fact. I have met a great many of them, and not with one whose daily average was as low as twenty dollars; and some, it is well known, have averaged, for a week or month, over a hundred dollars a day, and this without employing any Indians, or engaging in traffic. When a man finds he is gathering only his eighteen or twenty dol-

lars a day, he changes his locality and looks up a richer spot. From all the facts I can gather on the subject, I must believe that the white men now at work in the mines average each about forty dollars a day.

A man who has done considerable team work for me, went to the mines, engaged in drawing sand for others, from a dry spot to the stream, where the gold might be washed out; he received sixteen dollars the load, and drew five loads a day, quit it and went to working on his own hook, and more than doubled his earnings. I know a little boy who is twelve years of age, who has been at the mines for the last two months, and who has made his twenty dollars a day during that time, with no other machinery than a little wooden bowl. I know a woman who took her tea-tray, went to the mines, squatted down on one of the streams, and in six days worked out her two hundred dollars of gold. She said she should have worked out more, but she spent so much of her time in thinking about her children.

The gold diggers generally work in small companies of six or eight. They have a tent, provisions, cattle and horses. Each takes his turn in cooking and keeping camp. Four or five are engaged in getting out gold, and one or two in what they call prospecting—that is, hunting for some richer vein or deposit. They are a merry set of fellows, full of excitement and fun. They undergo great fatigue, and make sport of their hardships. They throw an air of levity about the acquisition of gold, which makes a hurlesque of the anxious faces

which you sometimes meet on 'Change. You would little think, from the careless gaiety of their demeanor, that they were getting out of the earth that element which shakes the commercial world. They lose their earnings at the gaming table with as little concern as you would an old garment, with a new one to take its place. There is more where that came from, is their expression, and the next day they prove it true. The whole economy of society is changed. The ditcher, hand-hopper, and butt-ender are the most independent men in the community—each has his bag of gold, and can fill it ten times as fast as his wants can empty it.

It is impossible to procure labour at any price. The offer of ten dollars a day would not detain any one from the mines. The consequence is, our fields are without farmers, our shops without mechanics, our forts without soldiers, our ships without sailors. The pay of a soldier, exclusive of his provisions and clothes, is about eight dollars a month. One of them got a furlough for twenty days from Colonel Mason, went to the mines, spent six days in going and as many in returning, leaving eight for work there, and brought back with him eight hundred dollars, just about what he would make in eight years soldiering it. Is it to be wondered at, then, that they desert? I doubt if there will be, by the time this letter reaches you, fifty soldiers at all our military posts in California. They will be in the mines—and if you send the few that remain, to bring them back, they will themselves go to digging gold.

Nor does the navy fare a whit better. Let a man-of-war anchor in our harbour to-morrow, and in three weeks she would hardly have men enough to get her to sea. Seamen who have been on this station five years, and who have four or five hundred dollars due them, forfeit the whole and escape to the mines. The only way a merchant-vessel gets to sea is to give the men a strong interest in the voyage. There is no discipline, except what they choose to establish among themselves—each for the time being is cock of the walk. The Isaac Walton, a naval store-ship, has just arrived from New York, and it is calculated that it will cost as much to discharge her as the whole price of her freight around Cape Horn. Indeed, she cannot discharge without the aid of one of our national ships, and the result will be the loss of some hundred sailors. It is in vain to talk about sentries—the sen-

tries will run. The only remedy is to cut off all connection with the shore; and in that case a man-of-war might as well be in the midst of the Pacific as on the coast. But enough of this.

There are now about three thousand persons at work in the mines. They average, at the very lowest computation, an ounce per day each man. This makes an aggregate of more than a million a month, and this quantity will be doubled in three months. This gold now goes to Mazatlan, Peru, and Chili, where it is coined and becomes a part of the currency of those countries. It is lost to us as the metallic basis of our circulating medium. It can be secured to us only by a mint, and one should be sent out here forthwith. There is at present very little coin in California, and the consequence is, this grain gold is sold here for ten dollars the ounce. It has been assayed by a competent person, and proved to be twenty-three and a half carats good. It must, therefore, be worth at our mint nearly double what it is sold for here. This monstrous sacrifice is made by Americans, by poor emigrants, and can be saved from it only by a mint, and the gold can be saved to us as a nation, and incorporated with our metallic currency only by a mint. Therefore, send us a mint, and the sooner the better. Take one of your mints that is standing nearly idle, and a good assayer, and an honest treasurer, and send them to Chagres, over the Isthmus to Panama, and then to Monterey, and we will coin gold enough for you to pay the Mexican war.

The news of peace produced but very little sensation here—men were too much occupied with the gold mines to trouble themselves much about the affairs of Mexico. The Californians grumbled a little about being sold, as they termed it, and then strung guitars and were as gay as ever. Give a Californian his guitar and fandango, and he won't give himself much concern about territorial lines. Our squadron is still at Mazatlan, but some of our ships are expected here daily; they will, however, be obliged to leave at once, or lose their men. Two vessels, it is reported, are on their way from the Sandwich Islands, with passengers for the gold mines. Admiral Wooster—an American, and once at the head of the Chilian navy—died here a few days since. It is now more than three years since I received orders to the Congress—I expect to return home by the first ship that leaves for America.

CERTIFICATE OF THE MINT.

MINT U. S., Philadelphia, Dec. 11, 1848.

SIR—On the 8th inst. we received, as I have already had the honour to inform you, the first deposit of gold from California. It was deposited by Mr. David Carter, who brought it from San Francisco, by the Isthmus route. It weighed 1804.59 ounces Troy; of which 1423.80 was from the lower surface mines, and 380.79 from those at Feather River. On the 9th inst., another deposit was sent, by the Secretary of War, which weighed 228 ounces.

The gold was of two sorts in external character, though apparently not different as to quality. The first, from the "dry diggings," was in grains, which averaged from one to two pennyweights; the other variety, from the swamps or margins of the streams, being in small flat spangles, of which, on an average, it would take six or seven to weigh one grain. Of these, by far the larger part of the deposits was composed.

The gold was melted in six parcels, and the

loss by melting, due to the earthy and oxidizable matter which disappears in this operation, averaged about $2\frac{1}{2}$ per cent. of the original weight. The loss thus reported is moderate, and shows that the gold had been carefully washed.

Assays of the melted gold were made with great care, and the results showed a variation in fineness from 892 to 897 thousandths, the average of the whole being 894. This is slightly below the standard fineness, which is 900.

The average value per ounce of the bullion, before melting, is \$18.5 $\frac{1}{2}$; that of the same in bars, after melting, is \$18.50.

The whole value of the gold in two deposits was \$36,492, besides a few ounces reserved in the native state for the Secretary of War, at his request.

Very respectfully, your faithful servant,

R. M. PATTERSON, *Director*.

Hon. Robert J. Walker,

Secretary of the Treasury.

EXTRACTS FROM CORRESPONDENCE.

Extract of a Letter from Thomas O. Larkin, Esq., late Consul, and now Navy Agent of the United States, to the Secretary of State, dated at Monterey, November 16, 1848.

THE digging and washing for gold continues to increase on the Sacramento placer, so far as regards the number of persons engaged in the business, and the size and quantity of the metal daily obtained. I have had in my hands several pieces of gold, about twenty-three carats fine, weighing from one to two pounds, and have it from good authority that pieces have been found weighing sixteen pounds. Indeed, I have heard of one specimen that weighed twenty-five pounds. There are many men at the placer, who in June last had not one hundred dollars, now in possession of from five to twenty thousand dollars, which they made by digging gold and trading with the Indians. Several, I believe, have made more. A common calico shirt, or even a silver dollar, has been taken by an Indian for gold, without regard to size; and a half to one ounce of gold—say eight to sixteen dollars—is now considered the price of a shirt, while from three

to ten ounces is the price of a blanket. One hundred dollars a day, for several days in succession, was and is considered a common remuneration for the labour of a gold-digger, though few work over a month at a time, as the fatigue is very great. From July to October, one half of the gold-hunters have been afflicted either with the ague and fever, or the intermittent fever, and twenty days absence from the placer during those months is necessary to escape these diseases. There have not, however, been many fatal cases. The gold is now sold, from the smallest imaginary piece in size to pieces of one pound in weight, at sixteen dollars per Troy ounce, for all the purposes of commerce; but those who are under the necessity of raising coin to pay duties to the government are obliged to accept from ten to eleven dollars per ounce. All the coin in California is likely to be locked up in the custom-house, as the last tariff of our Congress is in force here in regard to the receipt of money.

Could you know the value of the California placer as I know it, you would think you had been instrumental in obtaining a most splen-

did purchase for our country, to put no other construction on the late treaty.

The placer is known to be two or three hundred miles long, and as discoveries are constantly being made, it may prove one thousand miles in length—in fact, it is, not counting the intermediate miles, yet unexplored. From five to ten millions of gold must be our export this and next year. How many more years this state of things will continue, I cannot say. You may wonder why I continue my correspondence. I answer, from habit, and your many remarks of the interest you take in my letters.

NAVY DEPARTMENT.

Extract from letter No. 34, October 25, 1848, from Commodore Jones to the Honourable Secretary of the Navy.

Nothing, sir, can exceed the deplorable state of things in all Upper California at this time, growing out of the maddening effects of the gold mania. I am sorry to say that even in this squadron some of the officers are a little tainted, and have manifested restlessness under moderate restrictions, imperiously demanded by the exigencies of the times, as you will see by the enclosed paper, addressed to three of the lieutenants. I am, however, happy to say that I have not been disappointed in the good effects of the means employed to prevent desertion, and to maintain order in the squadron, as but one desertion has taken place since the *rush of eight* from this ship on the evening of the 18th instant; and that the views and opinions of the few officers who were skeptical as to the *right* or efficacy of the means employed to prevent offences and to punish crime have undergone a most favourable change, whereby I shall be enabled to keep on this coast until the whirlwind of anarchy and confusion confounded is superseded by the establishment of some legal government, potent enough to enforce law and to protect life and property, which at this time are in great jeopardy everywhere outside our bulwarks.

FLAG SHIP OHIO,
Bay of Monterey, Nov. 1, 1848.

SIR—By Lieutenant Lanman, who left here on the 26th ult., in the ship “Izaak Walton,” for the coast of Peru, where he expected to intercept the Panama steamers, I forwarded several communications, acquainting you with my movements up to that date, which I hope you will receive early, and that they may prove satisfactory.

The enclosed extract from my last letter will convey the unpleasant tidings of the utter prostration of all law and order in our California possessions, brought about by the extraordinary developments of gold in this vicinity.

I have the honour to be your ob't serv't,
THOS. AP C. JONES,
Commander-in-Chief, Pacific Squadron.
Hon. J. Y. Mason, Sec'y Navy.

FLAG SHIP OHIO,
Bay of Monterey, Nov. 2, 1848.

SIR—In my letter, from La Paz, I recommended the retention on this coast of all cruising ships of the Pacific squadron, and pointed out how they could be kept in repair and manned without returning round Cape Horn to the Atlantic States. When that recommendation was made, I had no conception of the state of things in Upper California. For the present, and I fear for years to come, it will be impossible for the United States to maintain any naval or military establishment in California—as, at present, no hope of reward, nor fear of punishment, is sufficient to make binding any contract between man and man upon the soil of California. To send troops out here would be needless, for they would immediately desert. To show what chance there is for apprehending deserters, I enclose an advertisement which has been widely circulated for a fortnight, without bringing in a single deserter. Among the deserters from the squadron are some of the best petty officers and seamen, having but few months to serve, and large balances due them, amounting in the aggregate to over ten thousand dollars.

There is a great deficiency of coin in the country, and especially in the mines; the traders, by taking advantage of the pressing necessity of the digger, not unfrequently compelling him to sell his ounce of good gold for a silver dollar; and it has been bought, under like circumstances, for fifty cents per ounce, of Indians. To this state of dependence labouring miners are now subjected, and must be until coin is more abundant. Disease, congestive and intermittent fever, is making great havoc among the diggers, as they are almost destitute of food and raiment, and, for the most part, without houses of any kind to protect them from the inclement season now at hand.

The commerce of this coast may be said to be entirely cut off by desertion. No sooner does a merchant ship arrive in any port of California, than all hands leave her—in some instances, *captain, cook, and all*. At this moment, there are a number of merchant ships thus abandoned at San Francisco, and such will be the fate of all that subsequently arrive. The master of the ship “Izaak Walton,” that brought stores for the squadron to this port, offered, without success, fifty dollars per month to Callao, and thence twenty dollars per month home, to *disbanded volunteers*, not seamen. We were obliged at last to supply him with four men, whose term of service was drawing to a close. This state of things is not confined to California alone. Oregon is fast depopulating; her inhabitants pour into the gold diggings, and foreign residents and runaway sailors from the Sandwich Islands are arriving by every vessel that approaches this coast.

Very respectfully, your ob't serv't,
THOS. AP C. JONES,
Commander-in-Chief, Pacific Squadron.
Hon. J. Y. Mason, Sec'y Navy.

The correspondent of the New York Courier and Enquirer, writing from Monterey, California, under date of October 20, gives the following interesting information relative to the Pacific Squadron and the news from the mines :

The Pacific Squadron has arrived at this place from Lower California, coming in from day to day from the 4th until the 18th instant. The ships now here are the Ohio, Dale, Warren, Lexington, and Southampton. The St. Mary's is expected hourly from the United States.

On the 23d of August last, just after a strong south-east gale, the frigate Congress got under weigh from her anchorage in the Bay of La Paz, for home. The excitement among her officers and crew, on this occasion, was very great; for she had been kept on the station, without the shadow of necessity, upwards of three months after she was fairly entitled, from the length of her cruise, to return to the United States. On her departure, the Congress saluted the flag and cheered ship, after which her band struck up, "Home, sweet home!" and sad hearts were left behind. During the cheering, about three hundred hats were thrown overboard from the frigate, which act, being translated, signifies, "We leave you our old hats, Commodore—catch us again if you can." Most of the men comprising her crew were kept in service long after their terms of enlistment had expired. Authority for so doing was derived from an act of Congress.

At La Paz, on the 25th of August, claims of the *compromised*, to the amount of five thousand dollars, were paid by order of Commodore Jones. During that, and several succeeding evenings, *Monte Banks* were open all over the place. Shuffling of cards might be seen, and the jingling of money heard, even in courts and gardens, and, in one or two instances, in the very streets. Claims have also been paid at San Jose.

On the 29th of the same month the troops and emigrants embarked, the former on board the Ohio, and the latter on board the Lexington, and La Paz was delivered up at 2 P. M. on the 21st, when the Ohio saluted the Mexican flag with twenty-one guns. This was returned by the Mexicans, with two old carronades, up to sixteen guns, but at this juncture a man's arm being blown off, they ceased saluting. The squadron sailed from La Paz on the 1st of September.

The Lexington proceeded directly to this place, but the Southampton and Warren stopped at San Jose, and in a few days the Ohio also appeared off the latter place. Here troops were taken on board the Ohio, emigrants on board the Warren and Southampton, the Mexican flag was saluted, (returned this time with the full number of guns,) and on the 6th the three ships departed.

The Commodore expressed the opinion that in consequence of a heavy surf at San Jose, the safety of the public ships would be endangered by taking on board the artillery, ammu-

nition, and other army stores at that place. He, therefore, determined to leave them, to be sent for at some future day. On hearing this, several of his officers volunteered to get these off in safety, or forfeit their commissions. But he would not listen to them. So there they now are, at the mercy of our late enemy.

Throughout all Upper California, *gold, gold, gold*, is the cry. Fortunes are being made, squandered, and recuperated. Everybody is going to the *placer*, is there, or has been there. Even the governor could not resist making another visit to that region, and he has now removed his head-quarters thither. Desertions from the fort and the ships, of course, occur frequently, and the master of a merchantman now in port offers *one hundred dollars a month* for seamen to carry his ship to Callao, but has been unable to ship any even at that price. Between twenty and thirty ships are lying at San Francisco, without the slightest prospect of obtaining crews.

Commodore Jones, with a numerous suite, was to have taken his departure for the mines yesterday. The object of his visit, it is impossible to imagine. However, in consequence of the numerous desertions in the squadron, he sent a party, but remained here himself. A circular letter from the Commander-in-Chief to the Pacific Squadron, was but recently read on the quarter-decks of all the vessels, in which he speaks of the *placer* as a ridiculous "golden dream," &c. &c. But, immediately on arriving in Monterey, and ascertaining that, in Alta California, there is a gold deposit of about four hundred square miles, the edge of which can be reached in three or four days travel, and that even the governor of the newly acquired territory was *amongst*, if not *among*, the *diggers*, he prepared for a journey to the land of *dreams*.

Officers of the army have so far forgotten their dignity as to commence a system of speculation. Upon the road to the *placer*, wagons, with the brand U. S. upon them, may be seen, travelling at a brisk rate, and surrounded by parties of gentlemen in high spirits, mounted on fine horses or strong mules, some of which are also branded as above, all taking a northward course. In these wagons are—*visible*—saddle-bags, and pots, kettles, and other camp equipage; but if one could have a close examination, he would find, nicely stowed away underneath all these, goods for barter.

Navy officers, with the exception of the chosen band spoken of above, are obliged to look on at all this from their floating prisons, and no ship will leave the coast until the return of this party from the arduous service upon which they are now engaged. Meanwhile men are deserting, and officers threatened with courts-martial for allowing what it is utterly impossible to prevent.

The Lexington (store-ship) will leave here in a few days for San Francisco, to take in *gold*, (only think of that!) whence she will proceed to the Sandwich Islands, and from there to the United States, *via* Valparaiso and

Rio de Janeiro. What is the destination of the rest of the squadron the *land-lubbers* have not learned, but I heard a rumour that another ship would sail for home on the first of January, taking the route of the Lexington. I have also understood that the Commodore hopes to obtain permission to return home in the Ohio, by the way of the East Indies. This is all provided crews be left for the ships.

In addition to the above, the Courier and Enquirer gives a letter from an officer of the navy, dated on board the U. S. ship Dale, at anchor off San Joseph, Lower California, Nov. 17, which contains the following items:

The *rancheros* have left their farms, and unless supplies are sent into the country there must be a famine. I saw a man who paid six hundred dollars for a barrel of flour.

Every thing in the shape of goods and provisions commands the highest prices at the mines, payable in gold—which has been sold at the mines for five dollars per ounce, *Troy* weight, and in some cases for even less. At San Francisco and Monterey it sells for from ten to twelve dollars in trade. A vessel sailed a short time before our arrival at Monterey, for Mazatlan, with twelve hundred pounds of this gold, which I found upon our arrival sold for over sixteen dollars per ounce, *avoirdupois* weight. The gentleman who owns this gold came out to this country in January, 1847, in one of the store-ships chartered in Boston, to bring out provisions for the squadron; he brought out with him between four and five thousand dollars worth of goods, which he bought at auction for a venture. He located in San Francisco, and in August of the same year, he told me that with the goods he brought out, and his purchase of two lots, he was worth thirty thousand dollars. Lots bought originally for fifteen dollars are now worth five or six thousand dollars; all of this took place before the discovery of the mines. This gold has been assayed and found to be twenty-three and a half carats fine—pure virgin gold. The largest piece found weighs twenty-five pounds, in one solid block; the next weighs seven pounds, and so on, down to fine black sand.

Before I left Monterey, I saw Mr. ———, who came out to this country in the ——— store-ship as purser's steward. He, with four others, went to the mines in April last, and in seventeen days, he says, the five dug out twenty thousand dollars worth, when he was taken sick, and the copartnership dissolved.

He had fifteen thousand dollars worth with him, and does not intend to dig any more, but to trade in goods.

Clerks get eight dollars per day at the mines.

More than five thousand persons are said to be engaged digging at this time, and they daily receive large accessions of numbers.

Liquors are very scarce, and command the highest prices. *Shovels* have sold for twenty dollars, and *picks* for the same. I was offered six ounces of gold for my old cloak, which cost twenty-five dollars, and has suffered six years of hard wear. All articles of clothing sell well, and there are none in market.

A cargo of China goods realized \$200,000 in one week at San Francisco.

Some of our officers bought this gold at six, eight, and ten dollars per ounce, and on our arrival at Mazatlan, on the 20th of November, sold it for sixteen dollars per ounce.

The New York Herald says it has received private advices which are too wonderful for belief, and which it consequently suppresses. It states, on the strength of them, that the gold region is eight hundred miles in length by one hundred in width, and that a small body of diggers therein would produce annually one hundred million dollars' worth. The Herald's Monterey correspondent gives the following:

In my travels I have, when resting under a tree, and grazing my horse, seen a few pieces of pure gold picked up from the crevices of the rocks or slate where we were stopping. On one occasion, nooning or refreshing on the side of a stream entirely unknown to diggers or "prospectors," or rather, if known, not attended to, one of my companions, in rolling in the sand, said: "Give me a tin pan; why should we not be cooking in gold sands?" He took a pan, filled it with sand, washed it out, and produced, in five minutes, \$2 or \$3 worth of gold, merely saying, as he threw both pan and gold on the sand, "I thought so."

From the first of July to the first of October, more or less, one half of the people will have fever and ague, or intermittent fever, which takes them from the first day of digging until they have been one hundred miles from the "placer" fifteen or twenty days. In the winter, it is too cold to work in the water, but from next April to the following July, one million of dollars of pure gold, or more, per month, will be produced from the gold region, without digging more than three feet deep.

OREGON.

FROM all the information we were enabled to obtain before emigrating to this country, (says the editor of the Oregon Spectator,) we arrived at the conclusion that the lower portion of the country—the portion between the Cascade and the Coast Mountains—possessed a rich soil, with a surface generally level and conveniently diversified with prairie and timber; that the middle portion of the country—between the Cascade and the Blue Mountains—possessed considerable, though not extraordinary advantages; and that the Eastern portion of the country—between the Blue and Rocky Mountains—was of little or no value. We had lived in New England, and in the Western States, and had expected to find Oregon a New England—increased in the size and grandeur of its mountains, trees, and streams; and increased also in the extent of its valleys, and temperate in its climate. Oregon, as a whole, far, very far, surpasses our expectations. The Willamette valley does not contain as much level land as we had expected, but its soil is as rich, and its tillable land much more extensive than we had expected to find it. Nearly all the American settlements in Oregon are confined to this Willamette Valley, and yet much choice land between Puget Sound and the head-waters of this river remain untaken. The degree of fertility of any soil may be safely estimated from its products. The ordinary forest trees not only grow here in gigantic proportions—the black alder in Oregon grows to a stately tree, fit for sawlogs, from two to three feet in diameter. To doubt that such a soil would richly reward the labour of the husbandman, is treason against the Architect of Nature. This valley has received favourable representations from nearly all who have seen it, and spoken or written in relation to it. The land in this valley, for forty miles from its foot, is generally rolling, and covered with dense or scattering timber; above this distance, to the head of the valley, about one hundred and forty miles, the prairie predominates. The lower portion of the valley possesses an extremely rich soil, and is valuable for its timber, fish, and water power, but presents but little natural beauty. The middle and upper portion of the valley is strikingly beautiful and grand, and to its great beauty and grandeur is added a ready and sensible preparation, by nature, for its settlement and profitable occupation by the weary traveller. The lower portion of this valley is not without its prairies, among the most important of which are the

Tualatin plains. These plains are in the form of a half moon, containing at least forty thousand acres of prairie land, extremely rich and beautiful, are in full view of three snow-capped mountains in the Cascade range.

The country about Puget Sound is extremely beautiful; its soil is gravelly, and produces vegetables in great profusion, but is less suited to the growth of wheat than most parts of Oregon. The Cowlitz country—between the Sound and the Columbia—is interspersed with small rich prairies, productive in grains and vegetables, and, from recent explorations, believed to be rich in minerals. This portion of the country is but little settled.

The country about the mouth of the Columbia River has increased its population about one half from the last immigration. Clatsop plain, situate upon the Pacific, south of the mouth of Columbia River, possesses a gravelly soil, extremely productive of vegetables, but less productive of wheat. These plains, and others similar, lying north of the river, as yet unsettled, have been formed by sand thrown up by the waves of the ocean, and enriched by the decay of vegetation. The soil of the timbered land in the vicinity of these plains is similar to the soil of this valley, and undoubtedly will prove to be richly productive of grains and fruits, as well as vegetables.

The Clamet, Rogues, and Umpqua Valleys, (rivers emptying into the Pacific,) are as yet unexplored and unknown. The southern road to Oregon crosses these valleys high up, and, from what information we have obtained, we believe that they are second to no portion of Oregon.

We regard the middle portion of Oregon as one of the most valuable portions of the world, probably the *most* valuable for the purposes of grazing. It is a *pasture field*, extending more than four hundred miles north and south, and over one hundred miles east and west, containing more than four millions of acres of land, almost everywhere covered with a thick carpet of nutritious grass. The climate of the lower portion of Oregon is good, but the climate of its middle portion is better. If the grazing lands of New England, New York, Pennsylvania and Ohio are valuable, after the expenditure of great labour and expense to make them so, then that portion of Oregon, supplied as it is with a climate more healthy and mild than any of those States, and thickly spread by nature with the richest grasses, is *still more valuable*. If wool growing can be

made more profitable where sheep must be fed in winter, it can be made more profitable where they keep healthy and fat throughout the year, upon the natural grasses of the country, *as they have done and will do in the middle portions of Oregon.* Wheat, corn, oats, potatoes, peas, garden vegetables, and fruits, produce well in that portion of the country. Coal and lead ore has been discovered there, and water power for manufacturing purposes is abundant.

The middle and eastern portions of Oregon have been grossly misrepresented in the States. We are not aware that grains have been grown on the eastern portion of Oregon, except at Fort Colville and vicinity; yet, from the wild rye, flax, and other products which abound in the valleys, we believe that grains, vegetables, and fruits may be cultivated there with success. Eastern Oregon is also valuable for its grasses, and we venture the assertion, believing that time will show its truth, that it contains more and better grazing lands than all New England. If nature's freaks and frowns appear there, her pleasantries and smiles appear there also. Perhaps the beauty, grandeur, and simplicity of the works of nature are nowhere more imposing, and her mysteriousness nowhere more unfathomable than in the eastern portion of Oregon. The mineral springs of Bear River, with its pure and invigorating climate, is destined to become the great watering-place of the world.

Oregon is not only valuable for its soil and grasses, but also for its climate, timber, and fisheries, and for its location upon the Pacific. There are many intelligent men in the States, who believe that Oregon has from five to six months of incessant rain, and about as many months of drought, in the year. We have passed a winter, but not a summer, in Oregon. It is said that last summer was unusually dry. We arrived in the Willamette Valley on the 15th of September, some time before the commencement of the rainy season, and when we arrived, the soil and vegetation showed less suffering from drought than we have frequently seen in the States.

The wheat crop of the last season was unusually small, the cause of which is attributed here to lack of the usual spring rains; yet sufficient was produced to supply the greatly increased population of the country with bread, and seed for sowing, all of which was full and perfect. The last season's crop of oats, potatoes, corn, (so far as it was planted,) vegetables, and fruits, though not heavy, was sufficient for the wants of the country. These facts should satisfy any man that the droughts of Oregon are more terrible in name than in

fact. It seldom snows in this valley. In December last, we saw ice about three-fourths of an inch thick, on dead water, in small shallow pools, the result of three cold days and nights. During the greater part of last winter there were no frosts here. That which is here denominated the "rainy season," commences on the first of November, and ends on the first of March—four months. Between the last day of October, 1847, and the first day of March, 1848, in this valley, there were seventy-six clear days, fourteen days on which it rained, hailed, or snowed all day, and thirty days on which it was neither clear nor stormy all day. Those of our citizens who have passed the winter in the middle portion of Oregon, represent the climate there as beautifully mild and pleasant, with scarcely a rainy day during the winter.

The immense growth and quantity of the timber of Oregon, we believe, are generally admitted. The timber is valuable, so far as it is needed for home consumption, and so far as it is profitable for exportation. There are eighteen saw-mills in operation in Oregon, and a greater number nearly ready for operation, and yet lumber is worth \$20 per thousand in currency. The Oregon lumber is shipped to California and the Sandwich Islands, and its value for shipment controls its price at home.

That the rivers of Oregon abound with the choicest fish, we believe also is generally admitted. Several hundred barrels of salmon are annually packed here; as many thousands of barrels might be packed annually.

The day is not far distant when people residing upon the Atlantic coast will be engaged in the fishing and lumbering business upon the Pacific. Lumber is fast disappearing on the Atlantic. The fisheries are becoming barren there. Whale fishing is almost exclusively confined to the Pacific. The present work of whale fishing is performed at a great distance from home. That farmer who goes ten miles from home to work his farm, cannot farm as profitably as he who lives upon his farm. Those who control the whale-fishing interest may continue to reside upon the Atlantic; but the operators will reside upon the Pacific to collect and store.

When the collecting and carrying branches of the whale-fishing interest shall be separated, that business may be reduced to system and certainty, but not before. That the Pacific will soon become the seat of active and profitable commercial operations, none can doubt. The capital of Oregon to be invested in these operations, furnished by Nature, is immense, beyond computation.

THE END.









